CHAMBERS'S

INFORMATION FOR THE PEOPLE.

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Sailors, a human plantation, whose works, though not indigenous, are highly valued for their style and greatness.
Sappho, a famous poetess of Lesbos, whose sensitive lyric, which indicate extraordinary power, and who was so tormented by love as to throw herself into the sea.
Satrapies, dispute of, 115.
Satrapies, the last of the Assyrian monarchs, noted for his luxury and effeminacy. His officers having conspired against him, and besieged him in Nineveh, he set fire to his palace and was consumed in the flames, with all his slaves, concubines, and treasures.
Saturn, son of Uranus and earth, and father of the gods and mortals, and supreme ruler of the earth till he was dethroned by his son Jupiter.
Saturn afterwards fled to Italy, and so civilized there the arts of peace and simple industry, that his reign was called the Golden Age, 86.
Saturnalia, festivals held in honour of Saturn, and intended to commemorate the freedom and equality which prevailed in the Golden Age, when Saturn was king. From the privileges enjoyed during these holidays by the poor, from and the slave, for a time, where a free and laughing spirit is displayed have been called Saturnalia.
Satyrs, minor deities of the country, shaped like goats, riotously, and having horns on their head and long hair over the body, 67.
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Scale, the, in Music, 727; the minor, 742; interval of, 74.
Scale, modulation of, in Music, 916.
Scandinavia. See Norway and Sweden, 906.
Scandinavian superstitions, 417.
Scholar, marks of a, 1st-rate, 796.
Science, logic of the, 32.
Scipio, the grandson of an illustrious family of Rome, one member of which, surnamed Africanus from the fact, was the conqueror of Hannibal at Zama. He was equally famous for his private virtues as for his military exploits, and the conference of a Scipio, a common phrase, had its origin in the reply of Africanus to see a beautiful princess who had fallen into his hands, but the fidelity of human nature should tempt him to take any advantage of his power over her sex.
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Serfs, a class of slaves, formerly as dangerous to their masters, the combination with the whipped Christians. The mutiny called the Jacquerie had been changed by Cruse.
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Sermon style, importance of, 552.
Serpentines, in Phrenology, 361.
Sol, duty of treating in one's, 478.
Sol-season, sentiment of, in Phrenology, 362.
Solfeggio, duty of, 478.
Solfeggio, duty of, 481.
Solfeggio, duty of, 482.
Somnal, discipline of children, and mother of Hercules by Jupiter, destroyed by her own wish to behold her lover in all the unsupportable blaze of his majesty.
Semiramis, a queen of Assyria, celebrated for her great energy of character, her warlike successes, and the magnificent buildings which she constructed in Babylon.
Semitic or Syro-Arabian race, in Ethnology, compared with the Syrian and Arabian families of mankind, 3.
Senecadier, inventor of lithography, 720.
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Separation, law relating to, in Scotland, 302.
Serpent, a deity of the ancient Egyptians.
Serpent, artificial, in Vocal law, 50.
Serpent, musical instrument, 707.
Servants, in domestic economy, 171.
Servants and masters, respective duties of, 472.
Sesostris, an early king, renowned for the extent of his conquests and the riddance of his way.
Sestet, in Music, 765.
Shaving and shaving-pastes, 757.
Sheriff, jurisdiction and functions of, 43.
Shinty, hockey, or hurling, game of, 654.
Shrove-Tuesday, festival of, 444.
Siegfried, woman inspired by the gods with the spirit of prophecy. The most famous of them was the Cumaean sibyl, who is said to have resided at Cumae in Italy, and to have obtained from Apollo the privilege of living for as many years as there were grains in a handful of sand. But she forgot to ask for youth also, and grew old and decrepit. It is stated that the sibyl had three of nine volumes of prophecies to the monarch Tarquin, and that those were preserved and consulted by the Romans with great reverence, until they were destroyed by fire. A book of Siblline verses is extant, but scholars universally deem it spurious and modern. Every style fortune-teller is familiarly termed a sibyl.
Sight, as a sense, 356.
Sight, second, superstition of, 129.
Silenus, a son of Pan, and attendant of Bacchus, usually painted as a jolly bloxicated old man riding on an ass and crowned with flowers.
Silk, for sleep and clean, 773.
Silver-plate, how to keep and clean, 773.
Similarity, the law of, in Metaphysics, 329; the one-ness of, 332.
Sincerity and insincerity, duties regarding, 446.
Sinon, a Greek, who, fraudulent before Troy have made his name a byword.
Sirens—Three sea-nymphs who lived on a small island near Sicily, and so charmed the passing voyager with their melodious voices, that he forgot all else, and died of starvation while listening. Ulysses, in order to hear them safely, had the ears of his crew stuffed, and himself tied to the mast of his ship. He was enchanted with the music, but the crew would not obey his commands to stop, and thus the listened and yet lived. The disappointed sirens threw themselves into the sea. Fine female singers are styled Sirens in common speech.
Sisyphus, a crafty prince of the heroic times of Greece, who, for some uncertain offence to the gods, was doomed, in the infernal regions, to roll a large stone up a hill, whence it re-descended immediately, rendering his punishment perpetual. The fruitless toil of Sisyphus is often the theme of allusion and comparison.
Size, organ of, in Phrenology, 348.
Skating, as an art and recreation, 643.
Skeating, in Dancing, 689.
Slander, crime of, 460.
Slavery, socially considered, 37.
Small, as a sense, 354.
Smuggling or contraband trading, 302.
Social Economics or the Industrious Classes, 529–544.
Sociability, emotions of, 335.
Society, Constitution of, 35–39.
Sociology, or the science of society, 308.
Socrates, the wisest and best character, perhaps, of antiquity. He was born and lived in Athens, where, in an unprepossessing way, he taught men to love virtue and abhorrence knowledge; the opinions and actions as recorded by his pupils Plato and Xenophon, have filled posterity with admiration, for him from whom they came. Socrates was at length

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PHYSICAL HISTORY OF MAN—ETHNOLOGY.

The most superficial survey of the earth shows its human inhabitants to be greatly diversified in external qualities—as complexion, stature, the form of the head, and the cast of the features. It also exhibits these diversities as all more or less localised, whence of course the inference is drawn, that they attach to races or nations, with whom they form permanent characteristics. Modern times saw the rise of a science, which, under the name of the *Physical History of Man*, observed these external qualities as zoological facts—facts both in themselves interesting, and of some value as means of determining certain points in the early history of the race. Latterly, the various languages of mankind have been added to the subjects embraced by the science; and as these are not to be comprehended under the term physical, a new name has become necessary, and that of *Ethnology*, as implying simply the science of national distinctions, has been adopted by many. It appears that we are now to look to this science not merely for a view of the natural history of man, and of the sundry questions connected therewith, but for light regarding that obscure but interesting portion of his social history which preceded the use of writing. As yet, however, Ethnology is only in its infancy, and for much which it advances, we are to expect that corrections or modifications will come ere many years are passed.

PRIMARY DIVISIONS OF MANKIND.

The observations of naturalists have shown that, while it is true that a certain species of animals, remaining under certain conditions, exhibits uniformity of characters from one generation to another, a change of conditions will, in the course of generations, produce a corresponding change in the organic characters of the species, and even in its mental habitudes. Thus, for example, while the wolf is everywhere the same animal, because everywhere passing a wild life in desert places, the dog, distributed over the whole civilised world, and subjected to a great variety of conditions, has passed into numberless varieties of form, colour, and disposition. It appears, however, that these results are only efforts of nature to accommodate herself to circumstances, for the purpose of maintaining the existence of the species under the new conditions, and that there are limits beyond which change cannot be carried; so that, after all, a particular type is constantly preserved, towards which the animals would return if the original conditions were restored. Thus the domesticated pig of Europe, allowed to run wild in America, has recovered the tusks and other external features of the wild boar—that original state of the species from which domestication had brought it. On such grounds it is that naturalists hold the distinction and perseverance of *species* as facts in nature. It has been found, indeed, that species nearly allied, as the horse and ass, will produce an offspring in which the parental qualities are associated or blended; but such hybrids have never been known to continue a race manifesting this union of qualities, and accordingly they in noway affect the conclusion, that specific character is a determinate thing in nature, only liable to temporary modifications.

Under the light thus derived from the study of the lower animals, it is now generally held that we are to regard mankind as of one species—a species passing into an unusual number of varieties in aspect and mental character, only because they are more widely diffused than any other animated beings over the face of the earth, and thereby exposed to an unusual variety of conditions, and called to exercise their mental qualities in an unequalled variety of ways. In the group of human beings commonly called a *nation*, there is always some set of characteristics more or less peculiar, and by which it can be distinguished from all others; though even in this association, especially if civilisation have made any considerable way, we shall find great differences in complexion, form, and mental character. Nations, again, are generally capable of being grouped under some denomination which expresses a more comprehensive set of characters, and marks an affinity of a wider kind. We may go on classifying in this manner, by more and more comprehensive characters, until we arrive at a small number of leading *varieties*, in which nothing remains in common but the general forms and powers of the human organisation. It is difficult, in the present state of the science, to say how many such varieties there are; but it may be convenient to describe the five into which the venerable Blumenbach has divided mankind.

Caucasian (Indo-European and Syro-Arabian) Race.

The many nations extending from India westward through Southern Asia into Europe and Northern Africa, and which recent times have seen sending out offshoots into the western continent, are comprehensively grouped by Blumenbach and Cuvier under the term Caucasian, because tradition seemed to point to the mountains between the Caspian and the Black Sea as the region where the race had originated. The propriety of the designation is denied by many, and it is now believed that two distinct varieties of mankind are grouped under it. These Dr Prichard describes as the Indo-European or Arian race—comprehending the Hindoos, Persians, Affghans, and Armenians, besides the

great bulk of the European nations—and the Syro-Arabian or Semitic race, comprising the Syrian and Arabian nations. Both groups have the general characteristic of a fair complexion (with exceptions to be afterwards noticed); and this seems to justify their being considered as one race; but, on the other hand, the languages are now believed to have no sort of true affinity—a test which modern ethnographers regard as more conclusive. It will nevertheless be convenient to speak of all these nations under the old term Caucasian, which has now been too extensively recognised to be readily displaced.

The Syro-Arabian group have been found from the earliest times of which we have any record, in the countries from which their general appellation is taken. (They are also called *Semitic* nations, as supposed to have descended from Shem, one of the sons of Noah.) Distinguished from all the rest of mankind by their language, they also stand out in history as a people of most remarkable characters, and particularly for their exalted notion of an unseen but almighty God, the creator of the world. In this group we find the founders of the great empire which existed for so many ages on the banks of the Tigris and Euphrates; the Phœnicians, who seem to have been the first commercial people of the earth; the Hebrews, whose history is that of the faith recorded in the sacred Scriptures; and the Arabians, among whom sprung up the Mohammedan religion. The Abyssinians probably belong to this race, and the ancient Egyptians are generally classed with it, though Dr Prichard is of opinion that these were in the main an Ethiopian or Negro people. Dr Larrey, the eminent French surgeon, was of opinion that the Arabs furnish the most perfect form of the human head—'the most perfect development of all the internal organs, as well as of those which belong to the senses.' Spare but active persons, skins of a light brown, sallowed sometimes by unusual exposure, high foreheads, large dark eyes, oval features, with aquiline noses and small thin-lipped mouths, form the personal characteristics of the Arabs. They have occupied the confines of the present Arabia from time immemorial, and their natural habits have ever been pastoral and migratory. The Bedouin Arabs claim descent from Ishmael; and however this may be, it is plain, from physical characteristics alone, that they are a cognate race with the Jews. The latter were originally derived from the Chaldeans, an elder branch of the Arab stock settled in Babylonia, and they were a pastoral and wandering people like their neighbours, until they settled in the cities of Palestine. A body of Canaanite Arabs, expelled by the Jews under Joshua, are understood to have settled in Africa, and become the nation of the Mauri or Moors. Governed by Mohammed and his successors, the Arab race rose to high consequence, and, under the name of Saracens, made great conquests of territory in Asia Minor, Africa, and in Spain. They were afterwards deprived of superiority in some of these countries, but left extensive tribes in the African continent and Asia Minor. The Berbers (or *Libyans*) are a race who seem of Arab descent, but who probably settled in Africa at a far distant date. They resemble the Arabs in person, but are more darkened in complexion. Under the name of Tuariks, they range both to the north and south of Mount Atlas. They are wilder in habits than the Arabs, but may be spoken of as the same race, and with the same capabilities.

The Indo-European group is described by Dr Prichard as appearing in the earliest ages on the high grounds between the sources of the Indus and Oxus, whence they went off in two great branches, ultimately constituting the Hindoos and Persians. The Zend, the ancient language of the Persians, and the Sanscrit, the ancient language of the Hindoos, have an affinity which sufficiently proves the common origin of the two nations. The Indians are a dusky people, the general complexion being described as of a coffee-colour; but while the people of the high grounds are comparatively white, many of those of the plains, and especially the classes engaged in out-door labour, are as dark as Negroes. In general they are a feeble and gentle people; but their having attained to civilised institutions at an early period, and their ancient distinction in the sciences, particularly mathematics, are circumstances which manifest no mean intellectual character.

Ethnographers consider it as established that the principal European nations are colonies from Asia, and descendants of the same people with the Hindoos and Persians. It is solely to a study of the languages that we are indebted for this conclusion. According to Dr Prichard, 'If we are to enumerate the different nations who are to be considered as ramifications of the Indo-European stock, viewing those as the most ancient which are farthest removed from the centre, or from the path of migration, we must begin with the Celtic nations in the west of Europe, including the two branches which are represented in modern times, one by the Irish, Scots, and Manx, and the other by the Welsh and Armoricans, or Bretons. Next to them, in the north of Europe, is the Germanic family. It consists, according to the conclusions of the latest and most accurate philologers, of two principal divisions: of the Northmen, ancestors of the Icelanders, Norwegians, and Swedes and Danes; and secondly, of the proper Teutonic stock in its three subdivisions, which are the Saxon or Western German, the Suevians or High German, and the Gothic or Eastern clan. The next branch of the Indo-European stock are tribes who speak the dialects of the Old Prussian or Pruthenian language. These dialects are the Lettish, Lithuanian, and the Proper Pruthenian, which, of all the languages of Europe, bear by far the nearest resemblance to the original Sanscrit. The people who spoke these dialects had a peculiar mythology, and an ancient and very powerful hierarchy, as famous in the north as were those of the Brahmins and the Druids in the east and west. The Slavic or Sclavonic race is a fourth Indo-European family: its two great branches are the Western or Proper Slavic, including the Poles, Bohemians, Obotrites, and the tribes near the Baltic; secondly, the Eastern branch, comprehending the Russians, the Servians, and other tribes nearly related to them.' Dr Prichard adds, that the Italian nations, excepting only the Tuscans, form collectively another and an early branch of the same stock, all their various languages, the Oscan, Latin, Sicilian, &c. being but variations of one speech. Finally, he enumerates the Albanians, Illyrians, and the more celebrated Hellenic or Greek race. 'It would,' he says, 'be an interesting question, if there were any data likely to facilitate its discussion, whether the Arian [Indo-European] nations found on their arrival in Europe the different countries already occupied by previous inhabitants, or vacant, and affording them a peaceful and undisturbed admission. The former hypothesis appears most probable, since we know that the most remote parts whither these nations ultimately arrived were previously inhabited. The Euskaldunes appear already to have possessed Spain before the arrival of the Celtic tribes in that country .... In the north of Europe the German nations, or rather the Northmen, found the countries on the Baltic coast already occupied by Jotuns, nations of the Finnish or Ugrian race; a people, like themselves, of Eastern origin, but emigrants of an earlier age, and from a different part of Asia.' From the appearance, moreover, of the remains of an earlier language in the Celtic, it may be surmised that the Celts, whose fate it afterwards was to be dispossessed of the greater part of their territory, were originally aggressors upon some still earlier people.

The *Germanic* family prevails, as has been said, over

a great part of Central and Northern Europe, filling Germany and Scandinavia, and partly also Russia and Poland. The decline of the Roman power brought out the Germanic tribes from their northern settlements, and, under various names, they intruded into the south-west of Europe. They likewise pushed themselves in powerful masses towards the west, and colonised the principal parts of the isle of Britain. From them came the chief elements of the dialects spoken in Holland, Denmark, and England. Robust forms, light hair, blue eyes, florid complexions, and large broad-fronted heads, constitute the chief physical characteristics of the pure Germanic family; while, morally and intellectually, they stand pre-eminent above all the other tribes of mankind. They are conspicuous, in particular, for what may be called the *industrial virtues*, exhibiting a degree of indomitable perseverance in all improving pursuits, which has rendered them the great *inventors* of the human race. The admixture of German and Tartar blood in the north-eastern nations of Europe, has given to these darker hair and complexions than the preceding section, and has also lessened their propensity to intellectual cultivation. The effects of the Tartar conquest of Russia in the twelfth century by Ghenghis Khan, whose successors held the country for 200 years, will probably be observable in the career of this people for ages yet to come.

The *Celtic* family formed extensive settlements at a very early period in Western Europe. The whole, it may be said, of Italy, Spain, France (called Gallia Celtica), and Britain, was peopled by them. The successive commingling of races, caused by incursions of the Greeks, Romans, and Germans, did much to obliterate the traces of this variety in its pure state; yet the race, language, and name, still remain in their primitive condition on the outskirts of the original Celtic dominions. These pure Celts show us what the physical characteristics of their ancestors were. Their frames are athletic, spare, and wiry; their foreheads narrow, and the head itself elongated; the nose and mouth large, and the cheek-bones high; in all, their features are rather harsh. In character they are hot and fiery, but generous and brave; and they are remarkably patient of fatigue. Intellectually considered, they are acute and ingenious in the highest degree, but are deficient in that breadth and solidity of understanding which distinguishes the Germanic family.

The present population of France partakes largely of the Celtic blood, notwithstanding various invasions of the Germanic tribes, from one of which, the Franks, came the modern name of the country. From the Celts, the French people derive their proverbial vivacity of temper, their quickness of perception, their dashing bravery, and, most probably, their undeniable inconstancy and flightiness of disposition. Britain, again, has retained comparatively slight traces of her early Celtic inhabitants, though the language is conspicuous in a vast number of the names of places throughout the island. A branch of the Germans had visited England even before the invasion of the Romans; and after the latter came Dane, and Saxon, and Norman, in such numbers, that the pure aboriginal stock were left only in the Highlands of Scotland, and partly in Wales. The Scottish Lowlands had early been colonised by people of Germanic origin; and subsequent intermixtures with the southern inhabitants of the island in time gave the population still more of the Germanic character. In this manner was formed the root of the existing British nation, one of the most remarkable on the face of the earth. Inferior to none of the Caucasian families in intellectual endowments, and possessed of indomitable courage and unbounded enterprise, it has scattered its colonies over a large portion of the globe, giving to new regions its language, its genius, and its arts. Much of the excellence that belongs to the British character certainly arose from the preponderating infusion of Germanic blood. But the sprinkling left of Celtic blood seems to have had its use also, in giving a share of vivacity to the comparatively heavy, massive temperament of the pure Germans. We may judge so from looking at the character of the unmixed Germanic families. The Dutch, for example, would evidently have been an improved race had their gravity of character been lightened by a little infusion of Celtic mercurialism. The Belgians have a pretty equal share of Celtic and Germanic blood in their veins; and consequently, while they display the industrial virtues of the latter race, they also show no slight admixture of Celtic vivacity.

There may appear some fancifulness in this mode of analysis, but we believe that an accurate examination of the proportions in which the Germanic and Celtic blood are mingled in all the countries of Europe, would fully bear out the views now taken. In Italy, Spain, and Portugal, infusions of Germanic blood took place, but to a comparatively slight extent. The aboriginal Celts of Spain were extensively mingled with Roman immigrants; and it may be said that at this day Romanised Celts, with a sprinkling of Gothic (Germanic) and Saracenic blood in their veins, form the existing population. In them, the faults of the Roman character, as well as its haughty virtues, are even yet distinctly traceable. Romanised Celts constitute the basis also of the Portuguese and Italian nations, and the preceding remark applies to their character as much as to that of the Spaniards. The languages of the three countries bear out these observations.

It has been remarked that the Semitic nations are distinguished from the rest of this group by their languages. In using language as a means of ascertaining the affinity of nations, philologers attach less consequence to a community of words, though this is not overlooked by them, than to a community of grammatical forms. It is remarked that 'a similar construction prevails through whole classes of languages which have few words in common, though they appear to have originally had more.' The words, it appears, change and perish, but the grammatical structure is permanent. It is also remarked that 'there is a cognate character in words themselves, which sometimes pervades the entire vocabulary of a whole family of languages, the words being formed in the same manner, and according to the same artificial rule.'* Common words, to be of any service in the inquiry, should be those which refer to the most simple and domestic things, and the most natural and ordinary acts, as those denoting father, mother, brother, the various parts of the body, the most conspicuous objects of external nature, as the heavenly bodies, the domestic animals, &c.; also the first few numerals, and the terms for such acts as eating, drinking, sleeping. Other words, it will readily be apprehended, are more apt to have passed from one people to another, in the course of commerce or other intercourse. Of these, however, it may be said that they are indestructible possessions of all nations. 'Tribes and families separated from each other have been known to have preserved such similar words for thousands of years, in a degree of purity that admitted of an easy recognition of this sign of a common origin.'

Upon these principles, it has been settled that the Sanscrit, the ancient written language of India, besides being in strong affinity to the Zend, or ancient language of Persia, forms as it were the type of all the languages of Europe, thus confirming the fact of all these nations being from one original. Old, however, as the Sanscrit is, it is only the last refined form of a language which had long existed in a ruder state. It is likewise on the same grounds established that the Syro-Arabian family of languages is entirely distinct from the Indo-European; for which reason, those who look most to language as evidence on ethnological subjects, set down the Semitic nations as forming an independent variety of mankind. The Chaldee, Arabic, and Hebrew are the chief languages of this family The last—which appears to have been also the language

* Report on Ethnology to the British Association. By James Cowles Prichard, M.D., F.R.S. 1847.

of Phœnicia and of Carthage—is memorable as that which has given a form of writing to Europe, and as that through which mankind have obtained the sacred Scriptures.

Mongolian Race.

The high lands of Central Asia, from the southern skirts of which the Indo-European and Semitic races appear to have descended, are thought to be also the original seat of a great cluster of nations, chiefly nomadic or wandering, which now people Tartary, Mongolia, and Russia in Asia, and of which the Turks are an offshoot. Dr Prichard ranks these peoples together, as exhibiting a tolerable affinity in features and language, under the appellation of Ugro-Tartarian. With them other inquirers class the vast horde of Chinese and Japanese population, as well as the tribes spread along the shores of the Arctic Ocean, in Asia, in Europe, and America, calling the whole Mongolian, in order to distinguish them as a separate race.

The physical characters of the Mongolians vary considerably, but the following general description will be found to apply extensively. The skin is commonly of a sallow or olive tint, and in some cases nearly yellow; the hair is black, long, and straight, seldom curling; the beard usually scanty; the iris black; the nose is broad and short, and the cheek-bones broad and flat, with salient zygomatic arches; the skull is oblong, but flattened at the sides, so as to give an appearance of squareness; and the forehead is low. In intellectual character, the Mongolians are by no means defective, but they are more distinguished for imitative than inventive genius. This faculty at the same time renders them highly susceptible of cultivation. In many cases, however, tribes of this variety have arrived at considerable proficiency in literature and the arts. Their moral character is decidedly low. The Turkish and Mongol Tartar tribes have been great conquerors in past times, and have often even vanquished the Caucasians; but in most cases their victories have only been temporary. The Fins and Laplanders appear to be a remnant of some primitive Mongolian people, whom the Caucasians originally pushed to the extreme verge of the Arctic seas, and were content to leave there. The Esquimaux, as well as the people of Finland and Lapland, have some physical peculiarities distinguishing them from other Mongolians, but these seem to be the effect chiefly of local position.

Under the test of language, it would appear that the term Mongolian, like that of Caucasian, comprises in reality two varieties or distinct races. The language of the Chinese, and the nations akin to them, is strikingly different in all respects from all others upon earth, 'being constructed of monosyllables which are incapable of inflexion, and do not admit of the use of particles as a supplement to this defect, the position of words and sentences being the principal means of determining their relation to each other, and the meaning intended to be conveyed.' The languages of the other nations comprised under the denomination of Mongolians, possess indeed nouns incapable of inflexion, and in which the variations of number, case, and gender can only be expressed by an additional word—thus far showing a faint affinity to the Chinese; but these languages exhibit other features marking a wide difference, having auxiliaries to composition, such as our particles and prepositions, though always placed after the words whose meanings they affect, and also a peculiar euphonic principle, usually called vocalic harmony, according to which only vowels of certain sets can occur in the same words. On these grounds Dr Prichard sets apart what he calls the Ugro-Tartarian from the Chinese family of this race.

Ethiopic (African) Race.

The Negro, with his black skin, woolly hair, and peculiar form of countenance, appears as a very distinct type of mankind, and this type is represented generally as occupying Africa, excepting only a certain space bordering on the Mediterranean, where a Caucasian people has intruded. Ethiopia, a distinguished portion of the territory occupied by this type, has supplied a designation for it, which seemed the more appropriate as the ancients recognised the whole of the African continent under this name. The race has also been described under the appellation of *Negro*. It appears, however, on a narrow examination of the known parts of Africa, that people fully characterised by the popular conception of the Negro features and colour do not occupy a large part of that quarter of the globe. The true Negroes, the people with which the slave system has familiarised us, may be said to be confined to the country of Guinea. Most of the other African nations depart more or less from this character.

Obscure as is our knowledge of Central Africa, it is tolerably certain that a great range of mountains crosses it nearly in the line of the tenth degree of north latitude, and that the central parts of the continent to the south are occupied by a vast table-land, much like that which constitutes the centre of Asia. The range of mountains makes one pretty decided division among the African nations, all to the north being partially civilised, while few traces of civilisation are observable to the south.

The most southern people are the Hottentots, who are described as 'well-proportioned, erect, of delicate and effeminate make, not muscular; their joints and extremities generally small; their face generally ugly, but different in different families, some having the nose remarkably flat, others considerably raised.' It is somewhat remarkable that this population, placed at the extremity of Africa, bear a strong resemblance to the Chinese and Esquimaux, who live at the opposite extremities of the globe. The Bushmen, neighbours of the Hottentots, appear to be the same people in a degraded and more savage state. To the northward, stretching across the whole continent, are the great nomadic nation of the Caffres. According to Professor Lichenstein, 'the universal characteristics of all the tribes of this great nation consist in an external form and figure varying exceedingly from the other nations of Africa. They are much taller, stronger, and their limbs are much better proportioned; their colour is brown; their hair black and woolly; their countenances have a character peculiar to themselves, . . . the high forehead and prominent nose of the Europeans, the thick lips of the Negroes, and the high cheek-bones of the Hottentots.' The Caffres have great herds, and also cultivate the ground. They have the idea of a supreme being and of a future state.

Similar nomadic nations, more or less approaching the Negro type, and of warlike character, occupy the countries of Congo and Loango on the west, and the region of Mozambique on the east, probably also the intermediate unexplored regions. In the whole of these countries there prevail dialects of cognate languages, excepting the district of the Hottentots.

The great region, now pretty well known to Europeans, situated to the north of the Gulf of Guinea, and extending far into the interior to the eastward, is the grand seat of the Negro type. It is from the Gold Coast, a portion of this territory, that the American

colonies were for ages supplied with slaves. In some districts are found the pure Negroes, an essentially simple and inoffensive people, of whom no description is necessary. Other large tracts are occupied by nations considerably above those in character and in their social state. We allude to the warlike tribes of the Fulahs, the Mandingoes, the Felatahs, and others, among whom a civilisation has been in progress for many centuries in connection with the propagation of the Mohammedan religion. For an example of the characters of these so far advanced nations, M. Golberry describes the Fulahs as 'fine men, robust and courageous. They have a strong mind, and are mysterious and prudent; they understand commerce. Their women are handsome and sprightly. The colour is a kind of reddish black; their countenances are regular, and their hair is longer and not so woolly as that of the common Negroes.' The Mandingo merchants are well known for their activity and intelligence. We can all sympathise in the surprise of Mr Park on finding a city of 30,000 inhabitants (Sego), with many of the usual features of civilisation in this portion of the earth.

It is now understood that, as we traverse the African continent northwards, we pass through nations in whom the Negro type becomes less and less conspicuous, as if it were shading off towards the characters of the Semitic race. 'This gradual change,' says Dr Prichard, 'is not the result of the intermixture of races on the confines of regions of old allotted to either separately. The intermediate tribes are not Mulattoes, or at all resembling Mulattoes: they have each their distinguishing features, which, besides their distinct languages, mark them out as races separate and peculiar, and not less distinct from Negroes than white races themselves. These observations are the results of recent inquiries made on the spot by persons well skilled in natural history and comparative anatomy and physiology, and aware of the important bearing of such inquiries on the physical history of the human species.' Thus in the great known district adjoining to the Red Sea, we pass through the Gallas, Abyssinians, and Nubians, amongst whom we find these transitions more or less marked. The Berberines of Nubia are said by Dr Prichard to represent very clearly the ancient people of Egypt. It appears, on the whole, that there are as great varieties of national appearances in Africa as in any part of the earth of equal extent and diversity of surface, and that the sole ground on which their distinction from the other races can be effectually maintained, is the peculiar character of their languages.

The African race are generally admitted to manifest an inferior intellect to the various tribes of Caucasians. They have never invented an alphabet, and their religious ideas are of a mean character. Yet it fully appears that various portions of this race have made a certain way in the arts of life and in a social polity, while we all know that individuals, introduced among a civilised people, and allowed to partake of education, have manifested very considerable talents. It must also be remembered that there are great appearances as if some offshoot of the Negro race were at least concerned in the origination of that first of all recorded civilisations, that of Egypt.

American Race.

The AMERICAN variety of mankind occupy well-defined territorial limits. They were originally spread over nearly the whole of the Americas, south of the 60th degree of north latitude, though their numbers are now thinned, and their territorial possessions curtailed, by the colonial incursions of the Caucasians. A reddish-brown complexion, long black lank hair, deficient beard, eyes black and deep set, receding brow (sometimes from artificial compression), high cheek-bones, prominent aquiline nose, small skull, with the apex high and the back part flat, large mouth and tumid lips, with fine symmetrical frames of middle height, form the chief physical characteristics of this race. 'In their mental character,' says Professor Morton, by whom they have been thoroughly studied, 'the Americans are averse to cultivation, and slow in acquiring knowledge; restless, revengeful, fond of war, and wholly destitute of maritime adventure.' The same writer divides the Americans into two great classes, one of which (Toltecans) embraces certain semi-civilised nations—as the Mexicans, Peruvians, and Bogotese; while the other includes all the hunting tribes of North America, the Brazilians, the Patagonians, the Fuegians, and other minor tribes, none of whom have exhibited the same capacities for cultivation as the first-mentioned nations. The Americans differ much in colour of skin and stature. Some of them are not brown, but of a perfect copper tint. The Patagonians are of almost gigantic size, while the Fuegians are very short in stature. Yet there are characters common to all, which have led accurate inquirers to set them down as being throughout one and the same people. Their languages have peculiarities of construction found to be universal among them, from Cape Horn to the far north. By those who, like Cuvier, have not viewed the Americans as an indigenous race, the mode in which the New World was peopled has been curiously inquired into, and it has been conjectured that they either came by Behring's Straits from Asia, or that some small party, in ages long past, was wafted accidentally across the seas to these vast shores. Such an occurrence as the latter has been proved to be not impossible, to say the least of it. But assuredly the weight of evidence is in favour of the opinion that the Americans are not a casual offshoot from some other human family, but a people so far indigenous at least, and primitive, as to be derived from a common root, endowed with specific and unique physical characters. The American race is obviously tending to extinction.

Malay Race.

The MALAY variety of mankind are characterised by tawny or dark-brown skins, coarse black hair, large mouth, short broad noses, seeming as if broken at the root, flat expanded faces, with projecting upper jaws, and salient teeth. The skull in this race is high, and squared or rounded, and the forehead low and broad. The moral character of the Malays, generally speaking, is of an inferior order. They are a race differing much in some respects from the Negro and Red Indian, being of peculiarly active temperaments, and fond of maritime enterprise. They exhibit considerable intellectual capacity, and are an ingenious people. Borneo, Java, Sumatra, the Philippine Islands, New Zealand, part of Madagascar, and various Polynesian islands, are inhabited by this variety of men. It is extremely probable, from the fact of their being found in islands surrounded by others in the hands of the Ethiopic race, that the Malays have pushed out the less active variety from these isles, and, in short, annihilated them. It is but too likely, moreover, that the Malays will in turn suffer extinction at the hands of a superior variety, or a variety rendered superior by civilisation, if not naturally so.

DISTRIBUTION OF THE RACES—AMALGAMATIONS AND EXTINCTIONS.

This point, really one of the most curious and important connected with man's physical history, may be illustrated by further references to the changes in geographical position undergone by the five great varieties of mankind now described from the earliest periods. Very few portions of the earth have retained the inhabitants by whom they are known to have been first peopled. With respect to Europe, it seems extremely probable, as Dr Prichard and others admit, that the Celtic and Germanic races were not the earliest settlers upon its territory. They pushed out, from some parts at least, a previous race, of which the Fins and Laplanders may perhaps be held to give us some idea.

As to this early Celtic migration, it may be worth while to adduce the view of its details which is given by one of the more modern and enlightened ethnographers, Dr Charles Meyer. The Celtic nation is regarded by this writer as, 'owing to its migratory habits and instincts, one of the most widely-spread of all the nations of ancient and modern history, having at various periods covered with its settlements, and perhaps even simultaneously possessed, a space of country extending from the Pillars of Hercules [Gibraltar] to Asia Minor and beyond the Caspian.' 'It seems to me,' says Dr Meyer, 'that the Celtic nation transported itself from Asia, and more particularly from Asiatic Scythia, to Europe and to this country by two principal routes, which it resumed at different epochs, and thus formed two great streams of migration, flowing, as it were, periodically. The one, in a south-western direction, proceeding through Syria and Egypt, and thence along the northern coast of Africa, reached Europe at the Pillars of Hercules; and passing on through Spain to Gaul, here divided itself into three branches, the northern of which terminated in Great Britain and Ireland, the southern in Italy, and the eastern, running along the Alps and the Danube, terminated only near the Black Sea, not far from the point where the whole stream is likely to have originated. The other stream, proceeding in a more direct line, reached Europe at its eastern limit, and passing through European Scythia, and from thence partly through Scandinavia, partly along the Baltic, through Prussia and through Northern Germany, reached this country, and hence to the more western and northern islands across the German Ocean.

Of these two streams or lines of Celtic migration, which, with reference to this country, we may distinguish by the names of the *western* and *eastern* stream; the former, although the less direct, seems to be the more ancient in history, and to have reached this country several centuries before the other. The principal nations belonging to it are the *Keltai* of Spain (to whom this name particularly refers) and the *Galli*. . . . As the nations and tribes of this western migration are those to which the name of Celts and Gauls more particularly refers, so to them belong most of those characteristics and institutions of the Celtic race—including the important one of Druidism—with which we are made acquainted by the writings of Cæsar and Strabo. The language of the western Celts is in its most distinctive features represented by the British or Gallic branch of the modern Celtic.

Of the nations and tribes of the *eastern migration*, the most celebrated are the so-called Picti and Scoti, who, from the close of the third century of our era, have for a long period held a leading place in the history of this island. . . . The time when the stream of this eastern migration first reached this island seems to have been the sixth century A.C., at which epoch, as we learn from Herodotus (iv. 13), a general commotion took place amongst the different tribes and nations of Asiatic Scythia, similar to that which 400 years later became the primary cause of the great migration of the Teutonic tribes in the fourth and fifth century. This great commotion described by Herodotus, precipitating the eastern on the western tribes, and extending itself through the Cimmerii, who then inhabited the shores of the Caspian, to European Scythia, finally brought the eastern Celts, in the central parts of Europe, into contact with the western, one of the results of which event was the incursion of the Galli into Italy.'*

It has been seen that this great wave of colonisation, not itself the first, was afterwards followed by another composed of the Germanic tribes. Dr Prichard considers it most probable that this new influx also came in two streams, one proceeding through the regions to the north of the Caspian, and the other across the Hellespont. Of late years, some curious light has been brought to bear upon the early history of these peoples, from the many tombs and tumuli scattered through the north of Asia. In these are found implements and ornamental articles, with which scholars endeavour to associate different sets of people, referred to three different eras. 'The oldest are the relics of a people with round heads, having the transverse diameter of the cranium large in proportion to the longitudinal. The implements and ornaments which are found in the tombs of this race indicate the greatest rudeness. They consist of tools and the heads of arrows and lances made of stone and bone, but nothing indicating a knowledge of the use of metals. Whether these oldest tombs were the sepulchres of a Celtic race, is a question not yet decided. It seems to be the opinion of Retzius and that of Nilsson, who has written a learned work on the antiquities of Scandinavia, that they were the burial-places of a people much older than the Celts. Similar remains more recently discovered in France have been supposed by MM. Robert and Serres to be referrible in like manner to different eras, but to what successive races they respectively belonged is as yet only matter of conjecture. It seems, however, to have been observed in many parts of Europe, that the skulls which, from their situation, and from the ruder character of the implements and ornaments buried with them, may be supposed to have belonged to the most ancient class, are of a rounder and broader form than the crania discovered in tombs of a later date; and this observation tends to support the notion entertained by many persons, that the west of Europe had inhabitants previously to the arrival of Celtic colonies, and that these earliest people belonged to a family of different physical characters from those of the Indo-European race, and were more nearly allied to the nations of Northern Asia.'

The Celtic population of the south of Europe were in a great measure overwhelmed by the Germanic tide from the north, and though centuries of confusion followed the collision, the good ultimately effected by the intermixture was immense. It appeared, indeed, as if a savage people there crushed a civilised one, but the result, in reality, consisted in the infusion of healthy blood into a vitiated frame. At this day there is but one important part of Europe in the hands of the pure Mongolian race—namely, Turkey. But at this very hour the once formidable power of the Ottomans appears verging to extinction. The Caucasian states around it have gradually seized province after province, and jealousy of each other has alone prevented them, on various recent occasions, from annihilating the petty remnant of the Mongols left in Europe. The power of the empire is not only going to decay, but, as M. Lamartine has lately shown, the Turks are in reality becoming extinct as a people. They are sinking beneath the pressure of the superior or superiorly-cultivated nations around them.

In Africa, the Negroes have already been stripped of a large portion of their continent by the Syro-Arabian and European nations, and are likely to be ultimately extinguished by them. If the climate of the same great country had been more favourable to the whites than it is, they would assuredly have taken a larger share in the occupation of it than they have done. As the case stands, their aggressions have been considerable.

* Dr Meyer on the Celtic Language, Rep. Brit. Assoc. 1847.

Not to speak of their coast stations, they have colonised the southern extremity of Africa, and the Caffres and Hottentots are falling before them, or are receding to the interior, to be finally crushed between the opposing forces of the Arabs and Europeans.

In Asia, the conquering Mongols long held extensive rule; but the anti-Caucasian power of Russia in the north, and the British in the south, have torn from them immense territories, and every few years behold additional losses on their part. Even at this time, the great Mongol power of China, which, by a policy cautious to an extraordinary degree, maintained for ages its independence, has been obliged to yield an admission to European settlements, which may be regarded as only the first footsteps of an invasion by which their power will be overwhelmed.

The truth of the view now taken is more remarkably borne out by the history of the Transatlantic continent than by that of any other country. Rapidly indeed have the Red Men of North America fallen before the march of Caucasian colonisation. The numerous islands of the Mexican Gulf have been so completely cleared of all traces of native population, that it has become a matter of doubt whether, on several of these islands, any native population ever existed. South America has been largely subjected to the same influences, and would have suffered more from them, had the Caucasians who went thither been a branch specially adapted for the business of colonists, and had not a considerable admixture of races peculiarised that colonisation. As it is, the natives have been thinned, though the amalgamation alluded to, arising from the *comparative* similarity between the races, renders the truth difficult of discovery. In short, if we look at the whole course of the past history of mankind, we shall find the Caucasian race through some of its families everywhere gaining the ascendancy, and slowly but surely renovating the population of the world.

In those instances where an amalgamation of varieties of men has taken place to a considerable extent (and there are a few prominent cases of the kind to be observed at present on the face of the globe), a people of a heterogeneous kind has been the result. In parts of South America and Mexico, not only Europeans and native Americans, but also Negroes and Malays, transported thither chiefly as slaves, have contributed to form the existing population. Europeans and Negroes produce a race called Mulattoes; the children of Europeans and native Indians are termed Mestizoes; and those of Negroes and Indians are styled Zamboes. Of course the sub-varieties are numerous—indeed almost numberless. The European and the Mulatto produce Tercerons; the children of the Terceron and the European are called Quarterons or Quadroon; and those of Quadroons and Europeans are Quinterons. In the Quadroon, little or no vestige of dark blood is visible; but in most countries where these admixtures take place, the rights of pure white blood are only assigned to the Quinteron. Mexico, and the greater part of the states of the South American continent, including Peru, Chili, and Brazil, with the colonies and islands of the West Indies, are the chief scenes of these amalgamations of blood. Undoubtedly their immediate consequences are pernicious. The white blood is everywhere haughtily disposed towards the dark, and all the jealousies and oppressions of *caste* are accordingly displayed to a dreadful extent. Whether, out of the numerous varieties and sub-varieties of species there at present to be beheld, *one* perfect and homogeneous race shall ever be formed, is rendered doubtful by the undiminished, if not increased, eagerness with which the purity of the white blood continues to be maintained. If we could suppose that the amalgamations of different varieties of mankind were never to produce happier consequences than in these instances, we might question whether such admixtures be desirable. The experiments of amalgamation and non-amalgamation may be said to have been tried on great scales in the two American continents, and it is of importance to notice the issue in the respective cases. In North America, we must ere long find the aborigines extinct; and in the place of hordes of savages, stationarily pursuing the wild and warring life led by their fathers from time immemorial, will be found a great and improving race, cultivating the arts of peace, carrying civilisation to the highest pitch, and extracting from their vast continent all the physical blessings with which the Creator has so liberally endowed it, and which He certainly meant not to lie unused.

DIFFERENCES IN ANATOMICAL STRUCTURE.

The Skin.

It has been already seen, that the Caucasians are generally distinguished by a white or fair skin, while the Mongolians are yellow, the Ethiopians black, and the Americans red or copper-coloured:—The black races are localised in the warmest regions of the globe, and their skin and constitution are fitted for their allotment. A black man can lie exposed to the hottest sun, without injury, while the skin of the white man, if exposed to similar heat, breaks out in blisters. The black man can labour under a burning sun with impunity; but the white sinks under exertion made in such circumstances; and this is well known to be the cause why slaves were introduced from Africa into the settlements of Europeans in tropical America. Sir Everard Home, who made some laborious investigations into this subject, was puzzled by the obvious physical fact, that the black skin must absorb more heat than the white. But it has since been suggested by Dr John Davy that the black perspires most readily. 'In the Negro,' he says, 'the blood flows more readily through the vessels, so as to promote perspiration, and by that means contributing to the cooling of the surface, it contributes again, when it flows back to the heart, to the cooling of the internal parts.' After quoting this remark, Dr Glover of Newcastle says—'Were the inhabitant of the tropic not possessed of this organisation, his system could not respond to the stimulus of heat, by a determination of fluid to the surface of the body; and the heat absorbed by the skin being prevented from entering the system by the perspiratory process, the greater *radiating* power of a dark skin must be beneficial in cooling. Again, the dark skin places the Negro in the conditions of his climate, by causing him to radiate heat at night, and become at that time cooler than a white under the same circumstances.' Hence the love of the Negroes for night dancing and exercise.

In former times, when only two varieties, the white and black, were recognised or thought of, it was supposed that complexion was simply a result of the action of the sun's rays. This idea would naturally arise from its being observed that exposure to the sun darkened a white person, while seclusion tended to bleach or whiten him; and that the black nations were those which chiefly occupied tropical countries, while the whites were placed in the temperate zone. The views of naturalists on this subject were recently disturbed by the investigations of M. Flourens concerning the actual structure of the coloured skin.* The white was represented as having a skin composed of three integuments. First, the outer or *scarf-skin*, a thin transparent pellicle, seemingly secreted by the parts below, and devoid of recognisable vessels or nerves; next below the *rete mucosum*, a soft pulpy net-work; next, or undermost, the *cutis* or true skin, a strong layer, abundantly vascular, and very sensible. It was supposed that the colouring matter of the dark races lay in the *rete mucosum*, and that the only difference between the two races in that respect lay in the one having a mucous integument charged with globules of colouring matter, and the other a mucous integument in which there were no such globules. Flourens asserted the difference to be considerably greater. He

* On the Natural History of Man. By M. Flourens. Edinburgh New Philosophical Journal, July 1839.

states that, in a sufficient variety of experiments upon the skins of Negroes and red Americans, he has found beneath the *rete mucosum* two distinct additional layers, capable of being detached, and the outer of which is the true seat of the colour of those races. The discoverer considers this as a difference much more important than any depending on form. Being a structural difference, he thinks it should be held as one of the first class, while differences of shape ought only to be considered as secondary. Without following him in these speculations, we may readily allow the importance of a peculiarity which consists in a distinct and additional *part*. M. Flourens, it may be remarked, has found the two layers also in Mulattoes. He had not had an opportunity of experimenting upon Mongolians or Malayans; but he infers from the other cases that in them also the extra integuments would be found.

M. Flourens adds, that in the case of Europeans tinged by exposure to the sun's rays, the mucous web is what is affected, becoming, as it were, slightly dyed. No degree of exposure can, he thinks, confer the colouring layers of the Negro and other dark races. He remarks, that the African Moors, who have lived beside the Negroes for centuries, have never acquired the colouring apparatus of that race; and it has been observed by travellers (Captain Lyon among others) that the Tuarks, a race of African Caucasians, of a dark-brown complexion, are nearly as white on those parts of their bodies covered up from the sun, as most Europeans. It is also well known that the progeny of a European, however much he may have been tinged by the sun of a tropical climate, is invariably as white as he himself was at first.

M. Flourens deems the difference of structure between the white and coloured races as sufficient to prove that they are of different stocks, and he accordingly speaks of them as 'essentially distinct races.' But there are some considerations which greatly confound all such conclusions, as drawn from differences of colour alone. Colours, it is to be observed, are not invariable characteristics of particular races. Most Caucasians, it is true, are white; but then there are also black Caucasians. The Hindoos are undoubted Caucasians, being proved to be so by many characters of form, as well as by the infallible test of language; yet the Bengalees and Malabars, varieties of the Hindoos, are often as black as the generality of Negroes. Caucasians of similar colour are spread through Persia and Western Asia, into Northern Africa. It has indeed been said that the Hindoo branch of the Caucasians alone includes every variety of colour, from the deepest black to something very nearly white. There are similar variations in at least one of the other four races. 'Although the Americans,' says Dr Morton, 'possess a pervading and characteristic complexion [which he describes as more brown or cinnamon-coloured than red], there are occasional and very remarkable deviations, including all the tints from *a decided white to an unequivocally black skin*.' The white tribes have been found chiefly in the high regions in the northern part of South America. These facts are themselves sufficient to show that the colour cannot be, as represented by M. Flourens, an essential or specific distinction; and their purport is confirmed by some more recent investigations, which result in showing the so-called *rete mucosum* as nothing but an inner layer of the epidermis, liable to continual renewal as the outer is worn away, just like the bark of the tree. The hue of the Negro is now believed to depend on the presence of colouring matter in the cells of the epidermis itself, and to be a variable phenomenon, exactly like the appearance of freckles under the influence of sunlight.

Hair and Eyes.

The hair is a strong individual characteristic in man. Its colouring principle is evidently the same, speaking comprehensively, with that of the skin. The hairs issue from bulbs or roots beneath the true skin, where vessels supply them with nourishment. An external horny covering, and an internal pith, constitute the body of each hair, and the pith is to some extent vascular, because liable to disease. It is doubtless in this vascular pith that the colouring principle lies. The fact of the pith being supplied both with vessels and nerves, is further proved by the effect which great grief can produce upon the colour of the hair. Dr Prichard had personally observed one case in which the hair grew white in a single night through grief, and many similar cases are on record. One distinguished French anatomist went so far as to assert, that in the bulbs of the hair lay the whole colouring matter of the skin; but admitting that minute hairs exist on the general frame, we could not thus explain the black hue of the inside of the Negro's lip, which is free from hair. However, when we consider that the woolly hair is usually connected with the jetty skin of the Negro, and the lank straight hair with the red skin of the Indian, we must believe in the existence of some strong bond between these physical characteristics.

In like manner do we trace a general correspondence between the colour of the eye and the skin and hair. The hue of the eye depends on a pigment or dye, lining the choroid coat or membrane. According to the tint of this pigment, is the eye blue, gray, brown, hazel, or black. Generally speaking, light-coloured eyes are conjoined with fair complexion and light hair, and the converse holds as commonly good. To this rule, it is well known, there are exceptions; yet Mongols, Ethiopians, Malays, and Americans, in ninety-nine cases in the hundred, show the extent of its applicability. The Caucasians display in this respect greater variations.

Albinoes are individuals whose peculiarities depend on *defects*. Red eyes and white hair are their chief features, though these features vary a little according to the race to which the individual belongs; and there are Albinoes to be found in almost all countries. The redness of the eye depends on the absence of pigment on the choroid coat, permitting the red blood-vessels to be seen. From a deficiency in the power of absorbing the rays of light, which purpose is served by the pigment, the eyes of Albinoes are weak. The Albinoes of the black race are called white Negroes, from the colour of their skin, and they have white woolly hair. Among the copper-coloured natives of the Darien isthmus, Albinoes are common. Their bodies are of a milk-white tint, covered with a short down; and they have white hair, with red eyes. They love such light as the moon gives, and by night are all life and activity, while by day they are miserable, the rays of the sun making their weak eyes stream with water. The connection between skin, hair, and eyes, and the unity of the source of colour for all these parts, is very strikingly exemplified by the peculiarities of the Albino.

Skulls and Heads.

As, beyond all doubt, we ought to consider the form of the skull as in some degree indicative of the intellectual powers, the distinctions in this organ necessarily become of great importance. The most perfect type of the Caucasian skull was alleged by Blumenbach to be found in the modern Caucasians-proper, such as the Georgians. 'The head [of a female Georgian, described by the philosopher] is of the most symmetrical shape, almost round; the forehead of moderate extent; the cheek-bones rather narrow, without any projection, but having a direction downwards, from the malar process of the frontal bone; the alveolar edge well rounded; the front teeth of each jaw placed perpendicularly.'

The head of the perfect Mongolian type is described by Blumenbach as 'almost square; the cheek-bones projecting outwards; the nose flat; the nasal bones, and the space between the eyebrows, nearly on the same horizontal plane with the cheek-bones; the superciliary arches scarcely to be perceived; the nostrils narrow; the maxillary pit slightly marked; the alveolar edge in some degree rounded forwards; the chin slightly prominent.'

In the Ethiopic variety of men, 'the head is narrow, and compressed at the sides; the forehead very convex, vaulted; the cheek-bones projecting *forwards*; the nostrils wide; the maxillary pits deeply marked at points; the jaws considerably elongated; the alveolar edge narrow, long, and elliptical; the front teeth of the upper jaw turned obliquely forwards; the lower jaw strong and large.'

In the American skull there is an approach in shape to that of the Mongol, with this difference, that the top is more rounded, and the sides less angular. The summit of the Malay head is narrowed, the forehead a little arched, and the upper jaw pushed somewhat forward. It would be superfluous to enumerate here the particular tribes marked by these varieties of skulls, as this has been done with sufficient distinctness in the general classification of the races. Of course, among Caucasians, Mongols, and Negroes, there are considerable individual differences in the form of the head, but the preceding descriptions give the type of each division.

The remarkable contrast in the prominency of the facial bones, conjoined, as it commonly is, with an equally striking difference in the anterior development of the skull, has been deemed by some physiologists a feature of the highest importance. Camper founded on these physical characters a scheme for estimating the degrees of intellect and sagacity bestowed by nature on the whole members of the animal kingdom possessing a skull and brain. The *facial angle*, as he termed the degree of prominency in the facial bones, was measured by him in the following way:—One straight line was drawn from the ear to the base of the nose, and another from the prominent centre of the forehead to the most advancing part of the upper jaw-bone, the head being viewed in profile. 'In the angle produced by these two lines,' says the physiologist, 'may be said to consist not only the distinction between the skulls of the several species of animals, but also those which are found to exist between different nations; and it might be concluded that nature has availed herself at the same time of this angle to mark out the diversities of the animal kingdom, and to establish a sort of scale from the inferior tribes up to the most beautiful forms which are found in the human species. Thus it will be found that the heads of birds display the smallest angle, and that it always becomes of greater extent in proportion as the animal approaches most nearly to the human figure. Thus there is one species of the ape tribe in which the head has a facial angle of forty-two degrees; in another animal of the same family, which is one of those *simiæ* approaching most closely to the human figure, the facial angle contains exactly fifty degrees. Next to this is the head of the African Negro, which, as well as that of the Kalmuc, forms an angle of seventy degrees, while the angle discovered in the heads of Europeans contains eighty degrees. On this difference of ten degrees in the facial angle the superior beauty of the European depends; while that high character of sublime beauty, which is so striking in some works of ancient statuary, as in the head of the Apollo, and in the Medusa of Tisocles, is given by an angle which amounts to *one hundred* degrees.'

Dr Prichard, in quoting this passage, remarks, that 'the faculties of each race of animals seem to be perfect in relation to the sphere of existence for which they are destined;' and hence, in as far as the measurement of the facial angle is applied to the determination of the comparative intellectual characters of different tribes of the lower animals, he holds Camper's scheme to be imperfect and ineffective. As a method of distinguishing varieties in the shape of the actual cerebral case, moreover, the measurement of the facial angle is not always a safe guide. 'I have now before me,' says Blumenbach, 'the skulls of a Lithuanian Pole and a Negro, in which the facial angles are nearly equal, but the difference between the shape of the two crania is otherwise prodigious.' Nevertheless, as a general test of the mental capacity of individuals, 'I think,' says Prichard, 'we must allow that experience is in favour of the position assumed by Camper. It is certain that every man is struck with the expression of dignity or elevation of mind and character in the ancient busts, which have a great facial angle, and that this expression would be lost if the facial angle were contracted. The fact seems indeed to be a general one, that men of great intellect have fully-developed brains, as indicated by elevated and capacious foreheads.' Since the time of Camper, it is scarcely necessary to tell the reader, the subject of craniology has been amply investigated by Dr Gall and his followers, who have founded upon their inquiries a system of mental philosophy (Phrenology), in a great measure new to the world, and of which the fundamental principle is, that the size and form of the skull, as depending on the size and form of the brain within, denote, other circumstances being equal, the intellectual and moral character.

Having obtained a considerable number of the skulls of the various races of men, Dr Morton measured their internal capacity by means of white pepper seed, and found the following results:—

Races.	No. of skulls.	Mean internal capacity in cubic inches.	Largest in the series.	Smallest in the series.
1. Caucasian,	52	87	109	75
2. Mongolian,	10	83	93	69
3. Malay,	18	81	89	64
4. Aboriginal American,	147	80	100	60
5. Ethiopian,	29	78	94	65

It thus appears that the aboriginal Americans rank fourth with respect to the size of their brains, the Ethiopians being lowest and the Caucasians highest.

This result is certainly the precise one to be expected, considering the capacity of the cranium as an index of intellectual power. The Caucasian race, which stands highest in the scale, is that which has produced the most civilised nations; while the Mongolian, the next in order of capacity of cranium, has produced a number of nations which remain at a fixed point in semi-civilisation. The Malay is a degree more barbarous, and the American and Ethiopian the most barbarous of all.

The physical characteristic now under consideration varies considerably among the white nations or Europeans. The Turks, who, though originally a Mongol race, have had their primitive physical attributes modified by continual intermixtures with Greeks, Georgians, and Circassians, present a form of skull combining, apparently, the mingled characters of the two varieties. The square Mongolian head has been rounded off in their case, and we find it to be now almost a perfect globe. The Greek head approaches the same shape. It was long asserted that the globularity of the Turkish head resulted from artificial compression in infancy, but modern physiologists discredit this notion. 'A single glance at the Turkish head,' says Mr Lawrence, 'at the symmetrical and elegant formation of the whole fabric, the nice correspondence and adjustment of all parts, the perfect harmony between the cranium and face, in all the details of each, demonstrate most unequivocally that it is a natural formation, and a very fine work of nature, too.' The writer now quoted proceeds also to remark, that, although no sufficiently extensive examinations have yet been made, the probability is, that between the European nations, such as the Germans, Swiss, Swedes, French, and others, distinct differences in the shape of the skull would certainly be found to exist on inquiry. Mr George Lewis observed in travelling on the continent, that the French have the lower and anterior parts of the cranium large, while the upper and anterior region is more prominent in the Germans. The Italian head, though comparatively small for the most part, is marked by great elegance. The Jews have long been noted for the fine Caucasian shape of their heads.

Dr Prichard avows the opinion that the form of the head is less a feature of races, than an indication of stages in civilisation. He intimates, but in a very general way, and without pretending to make the observation as one which holds without many exceptions, 'that there are in mankind three principal varieties in the form of the head and other physical characters, which are most prevalent respectively in the savage or hunting tribes, in the nomadic or wandering pastoral races, and in the civilised and intellectually-cultivated divisions of the human family. Among the rudest tribes of men, hunters and savage inhabitants of forests, dependent for their supply of food on the accidental produce of the soil or the chase, among whom are the most degraded of the African nations and the Australian savages, a form of the head is prevalent which is most aptly distinguished by the term prognathous, indicating a prolongation or extension forward of the jaws. . . . A second shape of the head, very different from the last-mentioned, belongs principally to the nomadic races, who wander with their flocks and herds over vast plains, and to the tribes who creep along the shores of the icy sea, and live partly by fishing, and partly on the flesh of their reindeers. These nations have broad and lozenge-formed faces, and what I have termed pyramidal skulls. . . . The most civilised races, those who live by agriculture and the arts of cultivated life, all the most intellectually-improved nations of Europe and Asia, have a shape of the head which differs from both the forms above-mentioned. The characteristic form of the skull among these nations may be termed oval or elliptical. . . . There are numerous instances of transition from one of these shapes of the head to another, and these alterations have taken place in nations who have changed their manner of life.'

It should not be omitted that many of the tribes of North and South America are so partial to low and retreating foreheads, that they have long been in the habit of assisting nature in producing that form of the head. The comparative softness of the osseous texture at birth, and the partially mobile state of the cranial sutures, enable them to effect this object. 'The Caribbs,' says Labat, in his account of a voyage to the isles of the Caribbean Sea, 'are all well made and proportioned; their features are sufficiently agreeable, excepting the forehead, which appears rather extraordinary, being very flat, and, as it were, depressed. These people are not born so, but they force the head to assume that form, by placing on the forehead of the newly-born child a small plate, which they tie firmly behind. This remains until the bones have acquired their consistence; so that the forehead is flattened to that degree that they can see almost perpendicularly above them without elevating the head.' The consequence is, that the heads of these people, naturally somewhat depressed in front, become hideously so; and unnatural bulges behind show that the cerebral matter has been forced into new positions. The possibility of changing the form of the skull has been doubted by some physiologists, but the circumstance is authenticated beyond all question. In Morton's *Crania Americana* are delineated many specimens of skulls thus altered in form, some so greatly changed by a pressure which has been applied both before and behind, as to resemble half-moons. It is not necessarily to be inferred that injury results either to the mental constitution or the general health of those who submit to this process. Supposing the pressure to be slow and gentle, the ductile organs will easily accommodate themselves to it, and it is probable that the brain, as far as its size or volume is concerned, will remain unaffected. A skull in Dr Leach's possession, bearing the marks of extraordinary compression, is known to have been that of a Caribb chief distinguished for intelligence and prudence.

The Teeth.

The general differences of features, accompanying these variations in the shape of the skull, were pointed out in going over the great divisions of the human race. The teeth of mankind differ very little in shape or position. 'The oblique position,' says Mr Lawrence, 'of the anterior incisors in the Negroes, and some other tribes who have prominent jaws, is the only *national* difference I know of in teeth. Their size and form exhibit merely individual differences.' The peculiarity here alluded to appears very distinctly to be only an effect of certain conditions, as it is found amongst our own population, where the diet is low and defective, and the general condition is unfavourable to the full development of the human being.

PHYSICAL CHARACTER.

The differences which exist among the races of mankind, with respect to Figure, Proportions, and Strength, form a branch of the present subject not less interesting than any yet noticed. It has long been attempted, in the civilised regions of the world, to ascertain and fix a standard of physical perfection for the human body; and there certainly does seem to be a model, the closest approach to which combines the quality of pleasing the eye with the possession of the greatest degree of corporeal power and activity. Artists have usually looked to the model-figures of the Caucasians of Greece, or, in other words, to their ancient statues, as exemplifying the finest possible proportions of the human frame. But the taste of man varies so much, and habit modifies to such an extent his physical powers, that any standard of the kind alluded to must be open to numberless objections and exceptions. If judged of by the common artistical standard of the civilised world, certain races of men would be set down as out of proportion, and yet they possess physical powers of the most perfect kind. The Hottentot and the American savage will outrun wild animals, and hunt down the deer; the slim and 'effeminate Hindoo,' as we call him, will keep up with the horse for days; and the South Sea islander feels himself at home in a raging surf, which would whelm a boat or vessel. Yet these races depart widely in many cases from the Grecian model. Such facts show that physical power is at least not confined to men moulded after the Grecian artistical standard, though it may be that individuals so moulded would surpass in the exercises mentioned, with equal training, those otherwise fashioned.

Stature and Proportions.

Different races of men exhibit considerable diversities of stature, though there are no varieties of stature in different nations so remarkable as those which frequently occur in the same family. The tallest race of men, authentically known to exist, are the Patagonians, a tribe occupying the coast of South America, between the Rio de La Plata and the Straits of Magellan. The territory occupied by them is of immense extent, and they are probably migratory in habits; hence a considerable degree of discrepancy in the accounts given of them by different writers. Magellan's companions declared the Patagonians to be commonly about seven feet four inches in height, English measure. Commodore Byron saw and conversed with many companies of them, and states that few were under seven feet, while others were considerably above it. Nearly six feet high himself, he could barely touch the top of a chief's head, though standing on tip-toe. Captain Wallis, again, having probably examined a different tribe, says that the majority of the Patagonians seen by him averaged from five feet ten to six feet, and that he only saw one man so tall as six feet seven. By later and accurate measurements, made by the Spaniards, we learn positively, that there are at least Patagonian tribes reaching the average height of from six and a-half to seven feet. Were they even somewhat less, they would be decidedly the tallest *race* of men existing on the face of the earth. All voyagers admit them to be large and muscular in proportion to their height.

A people situated in the polar circles of the north, stand nearly at the other extreme of the scale as re-

spects stature. The Esquimaux, or at least some tribes of them, are for the most part between four and five feet in height, and their congeners the Laps are also a dwarfish race. The Ethiopic variety also numbers some very small tribes, and in particular the Bosjesmans, a race said to be also very commonly deformed. Among the American nations there are also dwarfish tribes, and in particular the natives of Terra del Fuego, near neighbours of the Patagonians.

These nations only present us with the extremes of the human race, as respects stature. The subject is worthy of more minute investigation. It would be highly interesting, and indeed instructive, to know the comparative average stature of each of the ordinary varieties and subvarieties of mankind. Unfortunately, the observations of naturalists respecting stature have not been carried far. Quetelet and others have attentively examined the relative heights of individuals of *single* nations, at different ages, with a view to determine the general phenomena of man's growth; but few observations have been made upon the respective heights of different races or nations. The stature of the Caucasian has not been fully compared with that of the Mongol, or the Negro, or the Red Indian; nor have single nations belonging to any of these great varieties been satisfactorily contrasted with one another, as respects height. No accurate comparisons, for example, have yet been made of German with Spaniard, of Briton with Frenchman, or, in fact, of any one European nation with another. The following table, exhibiting the comparative heights of a small number of Englishmen and Negroes, is given in the work of Mr Lawrence upon the 'Natural History of Man.' The Negroes were from various regions.

	Stature. Feet.	In.		Stature. Feet.	In.
An Englishman,	6	4½	A Negro,	5	10½
Ditto,	6	1	Ditto,	5	5½
Ditto,	6	0	Ditto,	5	8
Ditto,	5	9½	Ditto,	5	0
Ditto,	5	7	Ditto,	5	7½
Ditto,	5	4½			
Ditto,	5	0			

The Caucasian here has considerably the advantage of the Negro, the average height of the former class being nearly 5 feet 9 inches, while the black averages little above 5 feet 6 inches; and the advantage would still be on the same side, were we to leave the first Englishman, certainly a man of uncommon height, entirely out of the reckoning. But it must be admitted, that from such an insignificant amount of examples no satisfactory conclusions can be drawn. The accounts of recent travellers in Africa would lead one to imagine that the majority of the Negro nations, excepting in the case of a few particular tribes, such as the Bosjesmans, are not below the Europeans in average height. The Caucasians have indeed the advantage in one respect; no tribe or section of them sinks so low in the scale of altitude as some of the other races do.

The stature of the Chinese, who must be regarded as amongst the purest specimens of the Mongol variety, was accurately and extensively measured by Mr Rollin, the surgeon who accompanied La Perouse. He found the ordinary height of the natives of the great Isle of Tchoka, on the east coast of China, to be *five French feet*.* The natives of the mainland, near the same region, measured 4 feet 10 inches (French). This examination places the pure Chinese below the average height of Europeans, and, we believe, correctly. Other Mongol races have not been accurately examined, with a view to the point under consideration. In that variety of mankind, however, as in the Ethiopic division, there are individual races which stand much lower in the scale of height than any Caucasian tribe. The Esquimaux and Fins prove this assertion.

The Americans also present great differences in height; so much so, that it would be vain to attempt to discover or strike an average for the whole variety—a variety which comprises the giant Patagonians and the dwarfs of Terra del Fuego. For determining the heights of individual tribes of Americans, we have at present no better authority than the loose reports of travellers. The same may be said of the Malays; and, such being the case, it would be a waste of time to attempt any comparative estimate having reference to these races. One conclusion may be drawn from the little which we do know, and that is, that civilisation equalises the stature of mankind, and keeps it near a steady mean. All the less cultivated races present extremes not to be observed among the Caucasians.

Professor Forbes of Edinburgh has made a series of experiments upon the physical differences between English, Scotch, Irish, and Belgians, the results of which constitute the most interesting information we are able to lay before the reader, with respect to the comparative heights of sub-varieties of the Caucasians. The following is a table drawn up by Professor Forbes, to exhibit the relative heights, at different ages, of the students attending his class during a series of years, and belonging respectively to England, Scotland, and Ireland. The Belgian measurements were probably derived from other sources. The number of individuals subjected to examination was very considerable, so many as eighty Scotch and thirty English being occasionally measured at once.

*Heights—Full dimensions with shoes.**

Age.	English.	Scotch.	Irish.	Belgians.
	Inches.	Inches.	Inches.	Inches.
15	64·4	64·7	...	61·8
16	66·5	66·3	...	64·2
17	67·5	67·9	...	66·1
18	68·1	68·5	68·7	67·2
19	68·5	68·9	69·4	67·7
20	68·7	69·1	69·8	67·9
21	68·8	69·2	70·0	68·0
22	68·9	69·2	70·1	68·1
23	68·9	69·3	70·2	68·2
24	68·9	69·3	70·2	68·2
25	68·9	69·3	70·2	68·3

This table places the Irishman uppermost in the scale of stature, the Scotsman second, the Englishman next, and the Belgian lowest. The comparison seems to be fair as regards the parties taken, for, if there were any peculiarity in their condition as students, it must have been common to all. As a comparison of national heights, therefore, the table perhaps exhibits conclusions pretty generally applicable, and we shall find it borne out by similar comparisons of *weight* and *strength*. Professor Forbes's observations are confirmed, in one point at least, by the following passage in Quetelet's work upon Man:—'When in England, we chose the terms of comparison from rather higher classes of society [he has been speaking of English factory *children*]: we find the stature of man rather *higher* than in France or the Low Countries, at least for young persons between eighteen and twenty-three years of age.' Quetelet then alludes to eighty different measurements of Cambridge students, taken in groups of ten each. The average height of every ten was 58 feet, or 5 feet 9 inches and 3-5ths to each man. This is above Professor Forbes's average; but as the English universities are chiefly attended by the aristocracy, who are undeniably a section of the people above the average national stature, it is probable that, as a national comparison, Professor Forbes's table approaches nearest to the truth.

The table alluded to indicates the cessation of growth to take place at twenty-two, the case of the Belgians being the only exception. We learn from another of the valuable inferences made by Quetelet from his investigations, that the stature is materially influenced by residence in town or country. 'The stature of the

* The French foot slightly exceeds that of England, the proportions of the former to the latter being as 1·066 to 1·000.

* Half an inch may be reckoned as equivalent to the shoe.

inhabitants of towns, at the age of nineteen, is greater than that of the country resident by 2 or 3 centimetres.' An examination, accompanied with vast labour, of not less than 3500 individuals living in towns, and 6000 residing in the country, brought Quetelet to this conclusion, which is therefore in all probability correct, and will be found to hold good in all situations. It was only at the age of nineteen, however, that the stature of the townsman was found by Quetelet to exceed that of the rustic; and he conceives it possible, though it was not in his power to obtain full proof on the subject, that 'the inhabitant of the country may attain to a greater height than the inhabitant of the town before the completion of the full growth.' The truth is, that circumstances greatly modify the rate at which the growth is developed. The law of nature on the subject is thus stated by Quetelet:—'The growth of the human being, from several months before birth up till the period of complete development, follows such a law of continuity, that the accessions of growth diminish regularly in amount, in proportion to the age.' Here, of course, each successive addition of growth is considered relatively to the growth previously acquired. 'We shall find,' he says, 'that the child increases in size 2-5ths from birth to the end of the first year; 1-7th during the second year; 1-11th during the third year; 1-14th during the fourth year; 1-15th during the fifth year; 1-18th during the sixth year, and so on; the relative growth always decreasing from the time of birth.' This simple law of nature, however, is liable to be greatly affected in its operation by circumstances. 'Dr Villerme remarks,' says Quetelet, 'that the height of man becomes greater, and the growth takes place more rapidly, other circumstances being equal, in proportion as the country inhabited is richer, the comfort more general, houses, clothes, and nourishment better, and labour, fatigue, and privations less during infancy and youth; or, in other words, the circumstances accompanying misery put off the period of the complete development of the body, and stint human stature.' There can be no doubt of the accuracy of these remarks. The simple exposure to the action of cold, not to speak of toil, materially influences the growth of man; and we see this proved, conversely as well as otherwise, in all the extreme climates of the world. The warmth and luxury of cities develop rapidly the growth of all but the lowest classes. Our British gentry bear out fully the conclusion of Quetelet, that 'individuals who enjoy affluence generally exceed the mean height: hard labour appears to be an obstacle to growth.'

Weight of the Human Body.

The stature, weight, and strength of the human body, form but parts of one and the same subject. Each of these properties or characteristics, if not dependent on, is at least closely related to, both the others. As the object here is to make the view of the species comprehensive rather than minute, it were to be wished that the *weight* of the body, among the various races of men, had been inquired into with some attention by naturalists. But, as in the case of the stature, this has yet been done only to a very imperfect extent. Quetelet has fully examined the comparative weight of the human body at different ages, and of differently placed individuals in a single nation; but no attempts have been made to determine the comparative weights of Mongol and Caucasian, or American and Negro. The endeavour to do so would be attended undeniably with vast trouble, and some may think the matter not worthy of it. This, however, is not a correct view of things. In all undertakings that require the exertion of physical energy, and more particularly in war, bodily weight, it has now been clearly shown, is a most important element; and, wherever the superiority in this respect lies, thither will success, other circumstances being equal, almost infallibly tend. An observation of the various collisions of troops on the field of Waterloo, whether of horse or foot, has been found to substantiate this proposition.

Professor Forbes extended his inquiries among his students, English, Scotch, and Irish, to bodily weight, adding examinations of similar, and also of mixed classes of Belgians. The results were as follow:—

Weight in Pounds, including Clothes.

Age.	English.	Scotch.	Irish.	Belgians (not mixed classes).
	lbs.	lbs.	lbs.	lbs.
15	114·5	112	...	102
16	127	125·5	129	117·5
17	133·5	133·5	136	127
18	139	139	141·5	134
19	141	143	145·5	139·5
20	144	146·5	149	143
21	146	149·5	151	145·5
22	147·5	150	153	147
23	149	151	154	148·5
24	150	152	155	149·5
25	151	152·5	155	150

Here, again, the superiority lies with the Irish, the others holding the same relative positions as in the case of stature. The mixed classes of Belgians, in whose case the weight of clothes was deducted, ranked exceedingly low—134 lbs. being about the average. We have it in our power, fortunately, to compare the conclusions of Professor Forbes with those of other inquirers, in as far as the English and Belgians are concerned. The eighty students of Cambridge, weighed (with the clothes) in groups of ten, gave an average, as we are informed by Quetelet, of 151 lbs.—the precise mean, it will be observed, of the Englishmen of twenty-five years of age weighed by Professor Forbes. The Cambridge students, however, were between eighteen and twenty-three years old, and therefore the Cambridge estimate is a little higher than that of Professor Forbes, as it also was in the case of stature. With respect to the weight of the Belgians, as examined by Quetelet, he states that the mean weight of the Cambridge students of eighteen and twenty-three much exceeds that of Belgians of the same age, being nearly the same as that of men of *thirty* in Brabant and the other departments of Flanders.

The superiority of the Irish in point of stature and weight is remarkable. We shall find it borne out by a corresponding superiority in physical power, as shown in the table of Professor Forbes having reference to that characteristic.

Quetelet's conclusions respecting the weight of the human being at various ages, and the general laws regulating his growth in this particular, are nearly as follows:—The mean weight of male children at birth is 3·20 kilogrammes.* The weight of female infants is less, being 2·91 k. A child loses weight for the first three days after birth, and does not make any decided increase until about the seventh day. Ages being equal, man generally weighs more than woman; but at the age of twelve this is not the case. The sexes are then nearly equal in this respect. The period of complete development in man, as respects weight, is the age of forty; woman, again, does not attain her maximum till the age of fifty. According to observations made on the most extensive scale in Belgium, the mean weight of man at twenty-five is 62·93 k.; at the age of forty (the maximum period), it is 63·7 k. The mean weight of woman at twenty-five is 53·2 k.; at fifty (the maximum period), it is 56·16 k.† The maximum weight of the human being is nearly twenty times the sum of his weight at birth. The mean weight of the human being, neither sex nor age being taken into account, is 45·7 k. From the ages of forty and fifty, men and women begin respectively to sustain a decrease of weight, from six to seven kilogrammes being the usual loss before the close of life.

* A kilogramme is as nearly as possible 2 1-5th lbs. English.

† The mean weight, therefore, of man in Belgium, at the maximum period, is little more than 140 lbs. English. This is much below the average of man in Britain.

Strength of Men.

The strength of the human frame is a subject which has received much more attention than has been paid either to its weight or proportions. It is obviously, indeed, a subject of the utmost moment, whether we view it with reference to the comparative physical powers of different races, or simply as a question interesting to civilised man from its bearing on practical mechanics. Various methods have been proposed for determining accurately the strength resident in the loins and arms of the human frame; and the instrument called the *dynamometer*, invented by Regnier, is that most generally approved of and employed for the purpose. The dynamometer, however, though used by Quetelet, Professor Forbes, and others, in their experiments, is allowed to be far from perfect, and it is only by uncommon care and caution that results can be obtained from it worthy of being depended on. It is an instrument which cannot well be described in mere words, and all that may be said of it here is, that it is so contrived as to indicate to the experimenter, on a dial-plate, the physical power resident in the loins and arms of the parties subjected to trial.

Observing the extraordinary displays of physical power and energy frequently made by savages, scientific men were long of opinion that civilisation diminished the strength of the human frame. Other circumstances tended to foster this belief. The Negro is possessed of longer arms, or at least forearms, than the Caucasian, holding in this respect, it is worthy of remark, a middle place between the white and the ape, which latter creature has arms of great length. 'I measured,' says Mr White, 'the arms of about fifty Negroes, men, women, and children, born in very different climes, and found the lower arm longer than in Europeans, in proportion to the upper arm and height of the body.' The same writer says that whites of 6 feet 4 inches, whom he measured, had shorter arms than Negroes of middle size. Similar sources of physical superiority appeared to voyagers to be possessed by the Pacific Islanders, the Malays, and many other uncultivated races. But more attentive observation has disproved the supposition. The voyager Peron took with him to the southern hemisphere a dynamometer, with which he experimented on the following number of individuals: twelve natives of Van Diemen's Land, seventeen of New Holland, fifty-six of the island of Timor (a fine race of men), seventeen Frenchmen, and fourteen Englishmen. The following numbers express the mean result in each case, the strength of the arms and loins being respectively put to the test. It is by lifting a weight that the strength of the loins is tested with the dynamometer:—

Mean Strength.

	Arms. Kilogrammes.	Loins. Myriogrammes.
1. Van Diemen natives,	50·6	...
2. New Hollanders,	50·8	10·2
3. Timorians,	58·7	11·6
4. Frenchmen,	69·2	15·2
5. Englishmen,	71·4	16·3*

The highest power of arm shown by any of the Van Diemen natives was 60; by the New Hollanders, 62; while the lowest in the English trials was 63, and the highest 83. In *lumbar* power, or that of the loins, the highest point reached by a New Hollander was 13; the lowest of the English was 12·7, and the highest 21·3.

'These results,' says Mr Lawrence, 'offer the best answer to the declamations on the degeneracy of man. The attribute of superior strength, so boldly assumed by the eulogists of the savage state, has never been questioned or doubted. Although we have been consoled for this inferiority by an enumeration of the many precious benefits derived from civilisation, it has always been felt as a somewhat degrading disadvantage. Bodily strength is a concomitant of good health, which is produced and supported by a regular supply of wholesome and nutritious food, and by active occupation. The industrious and well-fed middle classes of a civilised community may be reasonably expected to surpass in this endowment the miserable savages, who are never well-fed, and too frequently depressed by absolute want and all other privations.' Such is the case, as Peron's experiments show. But indeed the same thing is shown by a hundred historical facts. The Spaniards, on their first visits to the New World, found the natives much weaker than themselves; and this was proved not only by hand-to-hand struggles, but by the labour of the mines, in which the Indians were far deficient. The backwoodsmen of the States have always shown themselves stronger in single combats than the Indians. The Russians of Europe, also, are said by Pallas to excel the Mongol tribes of the empire to a remarkable extent in physical power.

Proper and extended comparisons are yet to be made of the relative physical power of the various Caucasian nations. The following table of Professor Forbes gives us at least a glimpse at the comparative strengths of English, Scotch, Irish, and Belgians:—

Lumbar Strength in Pounds.

Age.	English.	Scotch.	Irish.	Belgians.
15	...	280	...	204
16	336	314	...	236
17	352	340	339	260
18	364	360	389	276
19	378	378	404	296
20	385	392	416	310
21	392	402	423	322
22	397	410	427	330
23	401	417	430	335
24	402	421	431	337
25	403	423	432	339

The same relations are here preserved as in the previous tables, and as, with respect to weight and height at least, there could be no mistake, the probability that the last table is correct is much strengthened by the conformity in question. The difference between the Irish and Belgians is immense, the former exceeding the latter in strength by nearly one-fourth: while between the English and Belgians there is also a great difference, amounting to 62 lbs. The English, in Peron's table, showed a lumbar strength equal to about 376 lbs., a point considerably below that of the English in Professor Forbes's table. But we might expect such a difference between students and sailors, or stout colonists, which latter classes were those examined by Peron. Between the Scotch and Irish the difference is small comparatively. It is much to be wished that the example of the Edinburgh professor were extensively followed, both abroad and at home, so as to give us satisfactory views of the relative physical powers of the different European nations. Such questions, as already hinted, will be found to bear more directly on the prosperity of nations than has hitherto been commonly imagined.*

Regnier, the inventor of the common dynamometer, was led to the conclusion, after many experiments, that between the ages of twenty-five and thirty man is at the maximum of his strength, and that he is then able, by pressing strongly with both hands, to make an effort equal to 50 kilogrammes, and to raise a weight of 13 myriogrammes. Man preserves (says the same observer) much of his physical power nearly till the age of fifty, when it diminishes progressively. The experiments of another Frenchman, M. Ransonnet, made upon 345 of his countrymen, sailors of the port of Havre, give results somewhat different from those of Regnier.

* Peron—Corrected Edition of his Voyages. (The myriogramme is nearly 23 lbs. English.)

* We have been informed that the mere physical power of the different companies of men to whom the Duke of Wellington was opposed in his campaigns, was always with him an object of serious consideration.

Ranconnet found the mean manual power of these men to equal 46·3 kilogrammes; and the lumbar power, or that of the loins, to amount to 14·2 myriogrammes. There is every reason to believe, however, that the particular mode of using the instrument, employed by each experimenter, is the cause of such differences in its results. Quetelet's observations led to the following conclusions:—

Lumbar Power of Men and Women.

Age.	Men. Myriogrammes.	Women. Myriogrammes.
9,	4·0	3·0
15,	8·8	5·3
20,	13·8	6·8
25,	15·5	7·7
30,	15·4	...
50,	10·1	5·9

The highest point which the dynamometer here gave, for the power of the loins in Belgian men, was 15·5, twenty-five being the age when the power reached this maximum point. The conclusion agrees very closely with that made by Peron on the French sailors of his party, who exhibited a lumbar power equivalent to 15·2 myriogrammes, falling below that of the English, which was 16·3. Other observations, however, would lead us to suppose that the difference is more in favour of the British, when compared with the Belgians, than this calculation would indicate; and this would probably have appeared had Britons been tested under Quetelet's own eye, and by his directions.

Leaving the question of comparative degrees of strength, whether in varieties or sub-varieties of mankind, a word may be said respecting the extraordinary physical powers which *individual* men of various nations have occasionally evinced. We learn from history, that Milo, a Greek, could fell an ox with his fist, and afterwards carry it home on his shoulders. Firmus, a man who lived in later times, being born in Seleucia about the reign of the Emperor Aurelian, could suffer iron to be forged on an anvil placed on his breast, his body being then in the position of an arch, with only the two extremities resting on supports. He exhibited other feats of muscular strength, nearly all of which were successfully imitated during the past century by a German named Van Eckeburg. This man sat down on an inclined board, with his feet stretched out against a fixed support, and two strong horses were unable to move him from his position. In imitation of Firmus, he lay down, with his body in the form of an arch, and allowed a stone, one foot and a-half long and one foot broad, to be broken on his abdomen with a sledge-hammer. He also stood on an elevated platform, and by means of a rope round his waist, sustained the weight of a large cannon, a burden for several horses. A flat piece of iron was likewise twisted by him into the form of a screw.

Dr Desaguliers, a scientific person who witnessed the German's feats, showed, however, that skill was more concerned in the matter than mere strength. With the aid of some friends, the doctor actually performed many of the same feats, on the very night on which he witnessed them. The simple sustaining of the stone, it seems, was the chief difficulty in the most striking of the experiments, as the breaking of it caused little additional annoyance; and in place of increasing, the arched position of the body greatly diminished the shock of the blows. In the case of many of the other feats, in like manner, a skilful application of ordinary physical powers was found competent to their accomplishment. There appeared, nevertheless, about the same time with the German, an Englishman, named Topham, who performed equally wonderful feats by sheer strength, unaided by skill. He out-pulled a strong horse by main force, though in attempting to pull against two, he ultimately got himself hurt, being totally ignorant of the contrivances which his German predecessor used in aidance of his muscular powers. Topham rolled up pewter plates with ease, and unrolled them; he struck an iron poker, three inches in circumference and three feet long, against his bare right arm, till he bent it to a right angle; he placed a similar poker against the back of his neck, and with a hand on each end, twisted it round till the points met in front; after which he pulled it nearly straight again, his arms acting in a most unfavourable condition while he did so; and finally, among other feats, he lifted with his teeth, and held out for a time, a strong table six feet long, with half a hundredweight hanging at the farther extremity.

We have accounts of men performing more wonderful feats than those of Topham, but they are either ill authenticated, or seem to have resulted as much from skill as strength, as in the case of the German. Topham appears on the whole to have been gifted with physical powers as remarkable as any that we can believe any human being ever to have naturally possessed, judging from the details on such matters given in merely secular history.

MENTAL CHARACTER.

It is only a recapitulation of much which has been stated in the earlier sections of this treatise, that great differences of mental character are exhibited by the various races of mankind. The black intertropical nations generally are decidedly the lowest in the intellectual scale. They are generally characterised by great indolence, apathy, want of foresight and perseverance, as well as by gross barbarism and superstition. The idea of a social community has made but a small advance amongst them, though more amongst some tribes than others. The lowest of the class are to be found in Australia and some of the islands of the Pacific. Yet there is scarcely any tribe of blacks so mean but they possess certain traits of mind calculated to produce respect, being in some instances surprisingly ingenious in fabricating particular articles of dress, or in the management of canoes and the use of hunting and warlike implements.

The red races of North America are a considerably superior race to the Negroes. Their associations for war and other purposes are upon a more complicated scale; they show many remarkable traits of ingenuity; are more persevering; are highly sensitive; and in many tribes we find kindness and courtesy approaching to our ideas of the chivalric character.

The Mongolians and the Indian branch of the Caucasians must be considered next in the scale. They have formed great states, and made advances in the arts and in science; but a stationary character appears to be impressed on them all, and ages pass without their manifesting the slightest moral or political advance upon the institutions of their predecessors. The Malayan variety exhibits a character somewhat inferior to the Mongolians, but not so different as to call for special notice.

The Caucasian variety, as a whole, stands greatly above all the rest. It is characterised by superior sagacity and sentiment, and, above all, by a progressive character, which other races have only shown in a very limited degree. The social arrangements formed by some branches of this race are the most calculated to insure the general happiness which have ever been known. Their industry and perseverance, aided by the lights which they have deduced from science, have led to the production of an amount of wealth beyond the dreams of Orientals. Their benevolence has led them not only to found institutions calculated to succour the poor and afflicted in their own country, but to exert themselves for the benefit of other nations in every region of the globe. Wherever this race sets its foot, it makes itself master—a result directly flowing from its superior energy, skill, and perseverance. Amongst the branches of the Caucasian variety, considerable mental differences prevail. The Indian branch approaches to the Mongolian variety in its want of inventive progression; and it is only in the Pelasgian branch in ancient, and the Teutonic or German in modern times, that we find the utmost development of the higher sentiments and faculties of the species.

PERMANENCY OF TYPES.

This subject has been already touched upon; but it calls for some special consideration. We find some interesting light thrown upon it in a work entitled 'The Physiological Characters of the Races of Mankind considered in their Relations to History,' by Dr W. F. Edwards.

This writer cites the Jews as an example of a race who, for nearly two thousand years, have been spread throughout a variety of climes, yet have everywhere preserved their original features. In Leonardo da Vinci's picture of the Last Supper, painted three hundred years ago, the figures are represented with countenances exactly resembling those of the Jews of the present day. That the present well-known type of this people has undergone no change at any time, is proved by the paintings found by Belzoni in the tomb of an Egyptian king, probably not less than three thousand years old. These paintings represent four different races in procession—1. The natives, of a dark-brown tint; 2. Negroes, with black skins, thick lips, and woolly hair; 3. Persians; 4. Israelites, distinguished by their complexion and physiognomy. The paintings were exhibited in London, where Dr Edwards particularly examined them: he says, 'I had seen on the previous day Jews in the streets of London; I thought that I now saw their portraits.'

Dr Edwards endeavours to show that there is much error in our ordinary ideas respecting the effect of conquests in changing population. There is a tendency in savage races to sink under a superior intruding race, as the Guanches have done in the Canary Islands, the Caribbs in the West Indies, and a particular Indian race in Newfoundland; but when the original people are to a certain extent civilised, and therefore numerous in proportion to space, the law seems to be, that they continue to form the basis of the population, while the conquerors become the progenitors of an aristocratic class. Even when the cruel Ghenghis Khan deliberated as to the propriety of massacring the people whom he had subdued in the north of China, it was shown to him, and he yielded to the suggestion, that they were better spared, as being useful for producing victual and paying taxes. We see the Hindoos continuing to occupy their country on this principle, after being subjugated; and the British, though they have exterminated the intractable savages of Van Diemen's Land, seem to contemplate encouraging into their service the more docile races of New Zealand. Reason is shown by Dr Edwards for concluding that, in several European countries which have passed through the hands of various masters, the bulk of the people are still the same as in very remote times. Rome, and the Papal states, yet show a people of exactly the same type of visage with the ancient Romans, as represented in busts and upon bas-reliefs. A people of one type, supposed to be that of the ancient Gauls, were distinctly traced by Dr Edwards in eastern France and in northern Italy. He also adduces reasons for believing that the early Britons still form a large portion of the present population of England. History itself, rightly read, bears out these propositions. The Franks, who acquired the mastery in Gaul in the fifth century, were rather an army than a migratory nation. The Lombards, who overran and seized the northern half of Italy, are supposed to have only been about 100,000 in number. The immigration of the Saxons into England seems to have been upon a greater scale; but the Normans, led by the Conqueror, were only 60,000 soldiers.

The stability of the people on their original ground, and the permanency of their original character, are both shown in a striking manner by the description which Tacitus gives of the Gauls, Britons, and Germans. The Gauls he speaks of as 'gay, volatile, and precipitate, prone to rush to action, but without the power of sustaining adversity and the tug of strife; and this is the character of the Celtic portion of the French people down to the present day. He represents the Britons as cool, considerate, and sedate, possessed of intellectual talent, and says that he prefers their aptitude to the livelier manners of the Gauls. The same mental qualities characterise the English of the nineteenth century, and they and the French may still be contrasted in similar terms. He describes the Germans, allowing for the state of their civilisation, as a bold, prudent, self-denying, and virtuous people, possessed of great force of character; and the same features distinguish them still.'* It is scarcely necessary to remark, that the blue eyes and fair hair which the Roman historian attributes to the Germans, are still widely-prevailing features of their external physiognomy.

The perseverance of national types is supported by circumstances favouring the same conclusion with regard to individual families. It has been repeatedly observed, in galleries of family portraits, that a particular style of face, or some shape of feature, is handed down from one generation to another, or, passing perhaps over one or two generations, revives in a third. A certain thickness in the under lip has been thus hereditary in the royal family of Austria for several centuries. The face of the British royal family has experienced nothing but minor changes since the Electress Sophia, if not from earlier generations. Mr William Howitt, in his work entitled 'Visits to Remarkable Places,' gives a portrait of a school-boy who was pointed out to him at Stratford-upon-Avon as a descendant of Shakespeare, and it is unquestionable that the face has a considerable resemblance to that of the great dramatist. The present writer may be allowed to state, that he has seen a claimant of the Wintoun peerage in humble life, bearing precisely the peculiar physiognomy of two or three of the children of the baron of Queen Mary's time, as represented in a family group painted by Antony More, and engraved in Pinkerton's Scottish Gallery. The likeness in this case was as great as is ever seen between brothers. Another circumstance, in which the writer was personally concerned, will perhaps be considered as a curious illustration of the same point. He was one day, while walking in the country, struck by the appearance of a middle-aged gentleman who passed in a carriage, and who strongly reminded him of the common portrait of Sir William Wallace. He had previously, as might be supposed, no inclination to attach any credit to that portrait, but he could not help being greatly surprised when, upon inquiry, he learned that the gentleman who had just passed was General Dunlop of Dunlop, whose mother he well knew to have been the daughter of Sir Thomas Wallace of Craigie, the last lineal descendant of a branch of the family of the Scottish hero. It may be added, that the rencontre took place sixty miles from the seat of General Dunlop. As Wallace is now known to have visited France, it is not impossible that his visage may have been painted; or, supposing the portrait not his, it is likely to be that of some early member of the Wallace-Craigie family, in which case the anecdote would not be much less valuable as a proof of the long descent of a family face.

Effects of Local Circumstances in producing Changes.

On the other hand, there are proofs of great alterations having been produced in the external features of races by peculiar local circumstances. The descendants of the English settlers in the American states display a considerable variation in general form and aspect from the parent nation. The children of European settlers in New South Wales, are tall, thin, and weaker than their progenitors. In the West Indies, some distinct new peculiarities of structure have been observed in the descendants of English settlers. Their cheek-bones are higher, and their eyes deeper set in the head, than those of the English nation generally. In these respects, they approximate to the form of the aboriginal races of the American continent and islands;

* Essay by Mr Combe in Morton's *Crania Americana*.

and it has been pointed out that such a form is useful in protecting the eye-sight from the glare of the tropical sun. The Creoles have also cooler skins, and are keener of sight, and more supple in the joints, than the English. It has been remarked of the descendants of Africans in the United States, that, after three or four generations, their features lose much of the native African cast, and approximate to those of the white people, the mouth becoming smaller, the eyes lively and sparkling, the nose higher in the ridge, and the hair considerably longer and less crisp.

Analogous circumstances are observed amongst the lower animals. For example, the woolly sheep, brought into a tropical climate, loses its fleece, and retains only a thin coat of hair. The hogs of Cuba, all of which are descended from a European stock, are twice as large as modern European hogs. The horses which run wild in Paraguay, though all descended from variegated European races, are now of one peculiar colour, which we cannot doubt is the effect of some peculiar local circumstances. 'On considering these and analogous phenomena,' says Dr Prichard, 'we can hardly avoid concluding that the variations of animals proceed according to certain laws, by which the structure is adapted to the necessity of local circumstances.' If such be the case, it must be held as evidence favourable to the supposition that all the races are sprung from one stock. The variations might in that case be regarded as altogether produced by external conditions operating during a long course of ages. That the inhabitants of certain regions should be stamped with certain physical characteristics, is indeed nothing more than what may be expected; and hence the absurdity of laying hold of every little difference of dialect, every tint of skin or colour of hair, every mould of nose or contour of skull, as a warrant sufficient for a new type or subdivision of the human species.

CONCLUSION.

From all that has been written or learned on the subject of man's physical and social history, it appears evident that the constitutional character of the human being admits of a very high degree of culture and improvement. Nature ushers him into existence more weak and helpless than any of the lower animals, and, left uncultivated, he grows up an ignorant savage. In the most debased condition, however, in which he can be found, he possesses the rude elements of intelligence, and aspires to a destiny altogether beyond the reach of the creatures over which he has acquired dominion. His pre-eminence in the scale of being may be proximately traced to the structure of his brain, or organ of thought, which greatly exceeds in relative magnitude that of any of the lower animals; to his capacity for speech; to his upright posture; and to the mechanism of his hand, that most wonderful and multi-operative of all animal organs. His superior mental development, when operated upon by a combination of happy circumstances, usually classed under the name of education, enables him to trace effects to causes, to convey an account of his experience to his fellows, and, above all, to put not only this experience, but his numerous and varied thoughts, on record for the benefit of future generations. In this manner the savage, which man originally is, is gradually improved. Each new generation enjoys the benefit of an accumulated experience; and at last, as cultivation advances, man is found to be a highly intellectual being, with a frame more elegant and powerful than he possessed when his race was in a state of heathen darkness.

Under an All-wise Providence man has assuredly been placed on this earthly scene to perform a part immeasurably more dignified than that assigned to the lower orders of animals, each of whose generations is in no respect advanced, and cannot possibly advance, beyond the precise and humble station which was first occupied by its race. 'In this point of view,' to use the language of Lawrence, 'man stands alone: his faculties, and what he has effected by them, place him at a wide interval from all other animals—at an interval which no animal hitherto known to us can fill up. The man-like monkey, the almost reasoning elephant, the docile dog, the sagacious beaver, the industrious bee, cannot be compared to him. In none of these instances is there any progress either in the individuals or the species.'

Elevated, however, as is the meanest among human beings above the higher of the animal tribes, it is evident that for the proper performance of his part he must employ means for advancement, else he rests in a condition of ignorance and barbarism most deplorable to contemplate. Placed in a large and beautiful world, abounding with animal, vegetable, and mineral existences at his command, and accountable for his conduct, it behoves him to pursue such a course of activity as will enable him to enjoy the full benefits of his situation. By pursuing that line of policy which leads to social melioration, he rises step by step to a high degree of civilisation, and bequeaths to posterity almost imperishable monuments of his greatness. Attaining this enviable height, should he pursue or be the victim of a contrary line of policy, he sinks in the same ratio, and perhaps with greater speed, down to the original and humble level from which he had formerly arisen.

To be assured that these are not merely conjectural speculations, we have only to direct our attention to history, wherein examples are offered of the gradual rise, the eminence, the decline, and the ultimate extinction, of civilisation. Again, like the growth of a new order of plants on the soil of an exterminated forest, we find on the spot once consecrated by deeds of human greatness, a different branch of the family of mankind, pursuing by toilsome steps a similar rise from barbarism, and asserting in their turn the exalted capacity for improvement common to all the varieties of our race.

Although it is established both by Scriptural record and geological discoveries, that man was placed on earth last in the series of animal existences, his race possesses a sufficient antiquity to embrace various instances of the rise and decay of nations at a period so remote as to be beyond the reach of ordinary history, and only known by the wrecks of man's inventive genius. Thus, in the East, are found remains of architecture and sculpture, of the origin or meaning of which the oldest known nations were altogether ignorant, and which are a puzzle to modern archæologists. Thus, also, throughout North and Central America, there are found vast monuments of antiquity and objects of art, of a date long anterior to that of the earliest recorded nations, and which these nations looked upon with awe and wonder. The valley of the Mississippi, in particular, abounds in an immense quantity of artificial mounds of various shapes and sizes, and forts of different kinds, the origin of which is altogether unknown, but which are doubtless the remains of an extinct civilised race. This country, as is well known, was found, in the earlier periods of American discovery, in the possession of those red races usually called Indians, who are now retiring before the advance of the white. These red races manifest no symptom of possessing, or of ever having possessed, either the power or the inclination to erect such works: they disclaim having erected them, and in their traditions speak of them as the productions of a people who were their predecessors in the country, and have long been extinct.

To close this brief and imperfect sketch of man's physical history, we have only to add, that from all the existing remains of antiquity, both in the eastern and western hemisphere, and from all written history, it conclusively appears that mankind, taken in the mass, have in no respect degenerated in physical structure; but that individually they are as tall, bulky, and powerful as they were in the earliest periods of their progress, while, as respects mental qualifications, they now, in all enlightened societies, occupy a station in the scale of being which it is reasonable to conclude was never before enjoyed.

LANGUAGE.

LANGUAGE may include all signs, marks, or indications that are employed to signify or make known something different from themselves. The ringing of a bell, the hoisting of a flag, the sounding of a trumpet, are acts performed not for their own sake, but for the purpose of conveying some message or communication which has been connected or associated with them.

There is a well-known power in the human mind, called the Power of Association by Contiguity, which enables us to retain conjoint impressions of objects or occurrences that have been experienced together, and to revive the entire image of an aggregate whole through the presence of any one of its individual parts. By this power we can fasten together the notions of a sign and of a thing signified so firmly, that by seeing or hearing the sign we are reminded of the thing, and by witnessing the thing we can recall the sign; by what is seen we can be aware of what is unseen; and thus the operations of the human mind are extended from a narrow to a boundless sphere.

Language, however, properly means the particular system of signs universally employed and understood in the intercourse of human society, and applicable to every case of the communication of meaning or thought. Articulate speech, extended in civilised countries by the art of writing, is the contrivance everywhere answering to this description.

The signs made by human beings through their bodily organs are usually divided into *Natural* and *Artificial*. The natural signs are the instinctive and untaught movements of the body which arise out of the effort to express feelings, passions, or desires, and are what the lower animals are to some extent capable of producing. They consist of the tones of the voice, the play of the features, the movements of the limbs, and the gestures of the body. Every conspicuous passion or emotion gives a distinct expression to these various organs, by putting them into the state most in harmony with itself; and each different expression tends, by an instinctive operation of fellow-feeling, to call forth its proper emotion in those who witness it. The howlings and contortions of pain, the quakings of terror, the fixed gape of astonishment, the wailings and tears of wounded affection, the swellings of rage, the eagerness of pursuit, the cry of victory, the placid repose of contentment, the outburst of the ludicrous, the bending of reverential feeling, the urgent movements of intreaty, are all peculiar effects on the bodily organs, characteristic of the several feelings, and capable of communicating these feelings at once, and independently of all instruction, from one human being to another. But these signs are by far too limited to express the wide variety of thoughts and sentiments which the human mind can entertain, and which require to be communicated between man and man. Even in the most perfect development of this mode of expression, in the stage pantomime or dumb show, it is very obscure when it attempts to convey anything beyond the most obvious ideas and feelings. So far as it goes, however, it is the most powerful means of impressing one man's feelings on another, or of inspiring a multitude with a common enthusiasm. Hence it continues to be used along with artificial speech, as is seen in the gestures, grimaces, movements, and modulations of conversation and oratory. It is the resource of children, and of persons ignorant of one another's language; and it is partially employed by the deaf and dumb.

The artificial signs are made by means of certain sounds of the human voice, which are called Articulate, or jointed, because two or more of them can easily be joined together, or pronounced in unbroken utterance, so as to form combinations of sounds; and as these combinations may be varied without end, it is possible by their means to obtain a distinguishable sound or separate name for everything which forms the subject of communication or thought.

The different ways in which language may be viewed, and the various purposes which it serves, have given birth to as many different sets of rules or principles concerning it. One of these classes of principles constitutes the subject of *Grammar*; another refers to *Pronunciation*; a third forms what is called *Rhetoric*; a fourth enters into the science of *Logic*; and a fifth takes a larger sweep than any of these, and includes *Universal Grammar*, together with the explanation of the origin and progress of *language considered as a part of the civilisation of mankind*.

Grammar shows how to arrange words into sentences in all cases when several different names have to be brought together in order to express a meaning. It classifies and describes the different kinds of names, such as noun, verb, adjective, &c.; explains the exact meaning and use of the changes or inflections that some of them undergo; and teaches the proper mode of joining them under all circumstances. The inflections and arrangements of words being different in different languages, each tongue has a grammar appropriate to itself. Thus we have English grammar, French grammar, Arabic grammar, and so forth. There is also peculiar to each language a system of pronunciation, which may be considered as a branch of knowledge connected with it. *Rhetoric* lays down maxims for giving language its highest possible effect in communicating ideas and sentiments from one person to another; it teaches how to use words for the purposes of exposition, persuasion, and pleasing, and for composing the works of art that are founded on speech, such as the various forms of poetry. *Logic* views language solely as an instrument of inference or reasoning—that is to say, for extending knowledge wider than experience, for discovering the past, the future, and the distant, from the present. General terms, classifications, and propositions, belong to the word-machinery of logic. *Universal grammar* is founded on a comparison of languages in general, and treats of the parts of speech and peculiarities common to them all. It distinguishes the primitive classes of names from such as are derived, and explains the process of derivation. But a still wider inquiry is requisite, in order to describe the manner in which the entire body of language has grown up and gradually shaped itself into the various forms which we find among the different languages of the globe. Universal grammar, coupled with this further investigation, forms the subject of the present treatise. It sometimes receives the name of *Philology*.

The branches of knowledge comprised under grammar, logic, and rhetoric, are of the greatest utility in the business of daily life; but philology is chiefly to be considered at present as a subject of high speculative curiosity. It gives a wide field for the human intellect to explore, and it derives a deep and mysterious interest, from touching on things transacted before the dawn of history, and from its attempting to search out the ancient seats of nations and the affinities of remote peoples.

We shall consider the subject under the following heads:—1. The human voice, and the formation of letters and words. 2. The parts of speech, and their relationships according to the doctrines of universal grammar. 3. The origin and progress of language in general. 4. The languages of the globe, their arrangement into families, and the peculiarities which distinguish them from each other.

THE HUMAN VOICE—FORMATION OF LETTERS AND WORDS.

The vocal organs of man are formed by certain additions being made to the organs of chewing, swallowing, and breathing. For the purposes of sound they are set in action by the lungs, or rather by the chest compressing the lungs, and driving a current of air through the windpipe. The windpipe, instead of being a simple tube, is mounted inside with two flaps running from before backwards, and leaving a narrow slit between them. These flaps are attached to movable pieces of gristle or cartilage, that seem, as it were, to clasp the windpipe between them; and by muscles attached to these, the flaps or vocal chords can be tightened or relaxed at pleasure. In their relaxed state, the air passes through the windpipe with no other noise than we hear in simple breathing, or at most in whispering. But if they are tightened by muscles drawing the cartilages asunder, and are thus connected by firm muscular bands with the bones of the head, and if the breath is sent through the windpipe strongly, an audible and powerful sound is produced, depending on the resonance of the skull, in the same way that the sound of a violin depends on the vibrations being communicated by the strings to the whole solid mass of the instrument. By varying the tightness of the vocal flaps, and the size of the slit between them, and also by changing the strength of the blast from the lungs, tones of different strength and pitch may be produced. The whole of the *musical* apparatus of the human voice is contained in the windpipe with its cartilages and vocal chords.

It is found, however, that the sound in passing through the mouth may have its character altered, not in respect of musical pitch or strength, but in a way to give it a distinguishable effect on the ear. If a person singing any one note of the musical scale with the mouth gaping open, were to continue the same note with the mouth nearly shut, the sound would be identical in its musical effect, but in respect of character or expression, it would appear to be different. There would seem to be a change of shape in the sound itself. This peculiarity of sounds, which is dependent on the form and movements of the mouth during their utterance, is termed their articulate character; and sounds strongly marked with it are called *articulate sounds*. The musical and the articulate characters of sounds arise from different organs, and are governed by totally different principles. Their connection with the general framework of body and mind is also totally different. The windpipe sounds are combined into melodious successions, according to one class of feelings, while the mouth sounds are connected under the guidance of sensibilities which have very little in common with musical taste.

For articulate sounds, therefore, we have to refer to the construction and movements of the mouth. Every one knows its general form and parts, and we need only call attention to the movements performed in it. These are—1*st*, The movement of the lower jaw, which enlarges or contracts the height of the cavity, or its dimensions from above downward, and opens or closes the aperture of the teeth; 2*d*, The movements of the cheeks, which distend or lengthen the mouth in the cross direction, and, along with the lowering of the jaw, open the cavity to its fullest dimensions; 3*d*, The contraction of the ring of the mouth or lips, as exemplified in the whistling position; 4*th*, The elevations and depressions of the upper and lower lips, which combine with and modify the other movements; 5*th*, The movements of the tongue. These are very various:—1*st*, It may be protruded outwards, or drawn in to the back of the mouth; 2*d*, It may be bent or curled either up or down; 3*d*, It has a free motion from side to side. By these motions the tongue can come into contact with any point in the cavity, and make the touch by different parts of its own surface.

All these movements tend to alter the shape of the mouth, and with this the expression of the sound which issues from it. Hence the possible variety of sounds that may arise is unlimited. The distinguishable sounds, however, are not very numerous. They are arranged into various kinds:—

1*st*, We have what are called the *vowel* sounds. When all the parts of the mouth are in one fixed position, giving a free opening outwards, and remain fixed during the emission of a sound, so as to exercise no other influence than arises from the mere shape of the cavity, a vowel is produced. Thus in sounding *ah*, the mouth is opened, and the jaws, cheeks, lips, and tongue are fixed dead in one posture; so in sounding *uuh*, the posture, though different from the former, is still a quiescent or dead posture. By altering the shape, the sound is altered; but so long as it is an unalterable shape, a vowel is the result. The vowels that are most markedly distinguished from each other, are such as arise from the most widely different arrangement of the parts of the mouth. The five vowels, *ah*, *ee*, *ay* (*say*), *oh*, *uh*, are the five most distinct sounds resulting from the various extreme positions of the organs, and may be called the five fundamental vowel sounds, having a greater difference from each other than any one of them has for any other sound distinct from them. Thus the English vowel sound *awe*, arises from a middle position between *ah* and *oh*. The English sound of *i*, as in *sit*, is very little different from the fundamental *ee*; *set* is very near *say*; and even *u* in *but* is but one remove from the same sound. The *a* in *sat* is a modification of the fundamental *ah*. Every one of these sounds can be varied by a slight shading, so as to produce several that a fine ear can distinguish. In fact, no two nations pronounce similar vowels exactly alike, and even in the individuals of the same nation slight differences are very common: sometimes the people of one province can be distinguished by the shade that they give to the fundamental letters of the alphabet. Thus the Scotch sound of short *i*, as in *sit*, is often too near the *ay* sound, whereas in correct English pronunciation it should be nearer the *ee*.

But the varieties of vowel utterance can be immensely extended by combinations of vowels, or by changing from one to another within the same breath, as in *boy*. This gives rise to what are called *diphthongs*. There are some of these diphthongs so natural and easy, that they are adopted as regular alphabetical sounds, on which differences of words are founded. In English there are three proper diphthongs: these are the sounds in *sigh*, *now*, *boy*. The first is a combination of *ah* and *ee*; the second of *oh* and *uh*; the third of *oh* and a sound approaching to *ay*. There are other diphthongs less perfect than these, or in which the sounds do not run together so completely. Thus the *ua* in *quake*, the *we* in *Tweed*, are regarded as diphthongs less pure than the others.

2*d*, Of the class of sounds called *consonants*, a great many divisions have been made. They differ from the vowels in requiring some of the parts of the mouth to perform particular movements, in order to their being uttered. A certain play of the tongue, teeth, or lips, is necessary to each of them. This play may vary from the mere quiver of the tongue in sounding *s*, to the forcible shutting off of the sound by the sudden closure of the lips in *p* final. The sounds, *p*, *t*, and *k*, are connected either with sudden closures or with sudden explosions of the sounding emanation, and are therefore called *mutes*, and also *explosive* letters: *p* is formed by the lips, *t* by the point of the tongue striking the roof of the mouth near the teeth, *k* by the back part of the tongue striking the back part of the roof. Of these, *p* is the easiest to sound, and the first learned by children, and *k* the most difficult. The *p*, being formed by the lips, is called a *labial*, *t* a *palatal*, and *k* a *guttural*, or throat-formed letter. And as all the consonants are formed more or less nearly in one of these positions, a general division can be made of them into labials, palatals, and gutturals. Six distinct labials are enumerated, depending on different ways of sounding with the lip closure. The mute or explosive *p* has

been mentioned; next to it is *b*, produced by a less violent closure, which allows the voice to be heard during the act, as any one will feel by sounding *cup* and *cub*. The third labial is *m*, which is still farther removed from the sudden extinction occurring with the *p*; a free communication is opened with the nose for the egress of the air, and the sound can be made continuous like a vowel; in other words, we have the humming sound; this is the *nasal* labial, while *b* is called the *vocal* labial. The fourth labial is *f*, produced by the upper teeth and the lower lip coming together, and the breath passing through them without voice; this is the whispered or *aspirate* labial. When the vocal chords are tightened up, and the hard sound of the voice sent through this closure, we have *v*, or a second vocal labial, called the vocal aspirate. Lastly, a sound may be sent through the closed lips, making them vibrate or shake like a reed, as in the sound *prr*; this is the *vibratory* labial, or the labial *r*. A similar series can be described in the palatals. The mute being *t*, the vocal is *d*; the nasal are *l* and *n*; the aspirates are *th* (*th*umb), *s*, *sh*, arising from slightly-differing positions of the tongue in its contact with the palate: the vocals, or audible forms of these, are *th* (*th*y), *z*, *j*; the vibratory palatal is the common *r*. The gutturals likewise show the same list of varieties. First, *k* mute; then the vocal *g*; the nasal *ng*, a simple sound, though spelt in our language with two letters; the aspirate *ch*, as in *loch*, together with the fainter form *h*; the vocal aspirate *gh* unknown, and almost unpronounceable by us; and the vibratory *ghr* occurring as a burr in some people's utterance. This classification, which was first proposed by Dr Arnott, may be summed up in the following table:—

	Labials.	Palatals.	Gutturals.
Mute,	*p*	*t*	*k*
Vocal,	*b*	*d*	*g*
Nasal,	*m*	*l, n*	*ng*
Aspirate,	*f*	*th, s, sh*	*ch, h*
Vocal Aspirate,	*v*	*th, z, j*	*gh*
Vibratory,	*pr*	*r*	*ghr*

Besides these there are two letters essentially of the nature of vowels, but having in many cases the force of consonants. These are *w* and *y*; the one a prolonged or double *u*, the other a prolonged *e*. The peculiar effect of each is brought out when followed by another vowel, so as to make a diphthong. The *w* has a labial character, the *y* a guttural.

The nasal letters may be so attenuated as to lose the character of consonants, and merely give a nasal twang to the vowel adjoining. This is the case in the French pronunciation.

Speech is generally a mixture of vowels and consonants. The utterance most easy to sustain, and most agreeable to the ear, is formed by a vowel and consonant alternating. Vowels alone produce too feeble an impression to make a distinct language. As a general rule, abrupt sounds have the most marked effect on the ear; so that a mixture of these is necessary to make a clear and intelligible series of sounds. Hence the mute consonants *p*, *t*, *k*, have a high value, as characteristic and unmistakeable letters; but the hissing sound of *s* is remarkable for its piercing effect on the ear, and for its being so peculiar and distinct, that no other sound can be confounded with it; and it is therefore an exceedingly useful member of the alphabet. The same remark, in a less degree, applies to *r*, which leaves a vivid impression, and is not easily mistaken for any other sound. The aspirates generally, *f*, *sh*, *ch*, *h*, have a certain amount of the hissing peculiarity, but none of them are so intense as the pure *s*. They have all, however, a distinct and sharp effect on the ear.

The three mutes, *p*, *t*, *k*, and the three vocal sounds corresponding, *b*, *d*, *g*, cannot be pronounced without the help of some vowel; hence in their pure form they are abstractions rather than realities. Almost all the others permit of themselves a constant passage of the breath, and can therefore be sounded without the addition of vowels. Thus *m*, *n*, *l*, *r*, *ng*, *f*, *s*, &c. can all be sounded each by itself alone, although the addition of a vowel will in general make the exercise more easy. Thus *mmes* is easier and pleasanter than *mmm*. The passing into a vowel is a passing from a forced to a free posture of the parts of the mouth. But as these letters can be sounded with more or less difficulty by themselves, a number of them have been called *semivowels*, or we might call them thick or viscid vowels. They have a middle character between the vowels and the six consonants above-mentioned. They demand a less violent exertion than the abrupt consonants, but a greater exertion than the vowels.

Each of the vowels, standing alone, may have a distinct meaning attached to it, or be an intelligible sound—the name or expression of an object or thing. But, in general, intelligible sounds are made up at the very least of a vowel and consonant. The vowels alone would yield very few names, even if each were made significant; and no consonant by itself is the name of anything. So essential is the union of a vowel and consonant to make an intelligible sound, that it has been proved that the letters of the Hebrew alphabet (which used to be reckoned an alphabet of consonants without vowels) have really the force of a vowel and consonant taken together; hence in writing with them vowels were unnecessary, but when the letters came to be accounted pure consonants, it was requisite to imagine vowels to complete the spelling of the words. A single articulate union of a vowel and consonant makes a syllable, as *ab*, *be*, *up*, *me*; but it is possible to have a greater number of letters, and yet make one unbroken sound. A consonant can be sounded with a vowel before or a vowel after it; hence a vowel may be set between two consonants, as *bad*, making no more than one syliable. A syllable can be extended still farther by joining a semivowel consonant with another, it being possible to sound both along with a vowel, as in *blend*; and in some cases three consonants can be joined, as in *strength*. The letters *l*, *m*, *n*, *r*, have a great facility in going along with the more abrupt consonants to make single syllables; and from their effect in softening down the sudden harshness of the mutes and vocals, they were called by the Greeks *liquids*, and were very much employed in their language, for the sake of melody and softness, both as the single consonants of syllables, and in union with other consonants. The power of making syllables begin or end with double consonants enables us to increase to a manifold extent the number of distinct syllables which it is possible to form out of the letters of the alphabet, and thus enlarges the scope of articulate language.

Each distinct vowel may be the basis of a range of syllables, by being bedded in all the different varieties of consonants and their combinations. Thus we have *a*, *e*, *i*, *o*, *u*, &c. syllables. Each diphthong may also yield a train of syllables. It is possible further to vary some of the vowels without changing their essential expression, so as to produce a new class of syllables that shall be distinct from those founded on the ordinary form of the vowel. For example, there may be a long and a short form of several of them; as in the case of *not*, *nought*, where the vowel is the same, but short in the first word, *not*, and long in the second, *nought*: so also in *meet*, *mete*, where we have the short and long *e*.

If we revert again to the table of consonants, we may remark that, as regards ease of pronunciation, the labials are before the palatals, and these before the gutturals. It is easier to perform the articulate movements of the lips than it is to perform the movements of the palate and throat. Children can sound *m* very early; and before being able to pronounce *thumb*, they say *fumb*. But looking at the table in the other direction, or according to the classes, *mute*, *vocal*, &c. it may be observed that the mutes and aspirates, *p*, *t*, *k*, and *f*, *h*, *ch*, &c. are more easy than the same letters made vocal, *b*, *d*, *g*, and *v*, *dh*, *gh*, &c. and also more easy than the nasals *m*, *n*, *ng*. Hence some nations use the mutes

and aspirates where others employ the vocals in sounding the very same words. Horne Tooke gives a Welshman's version of an English sentence, which exemplifies this change throughout:—

> I vow, by God, *that* Jenkin is a wizard.
> I fow, py Cot, *that* Shenkin iss a wissart.

The tendency of some nations to prefer one class of articulations to another, is one of the causes of difference of speech when the language employed is substantially the same. Examples of this will be given when we come to speak of the peculiarities of the Asiatic and European tongues.

There are certain combinations of letters, both vowels and consonants, that are more easy to articulate than others; and in the usages of speech there are preferences of one combination to another. If we take the leading vowels in the order *ee, ay, ah, oh, uh*, there is a gradual lengthening of the mouth outwards in their utterance: with *ee* the mouth is flattened and shut; with *ay* it lengthens out to some extent; with *ah* it is still longer; and with *uh* it is longest of all. Now, in pronouncing the consonants, it is found that the labials may be best pronounced with the mouth lengthened, and the gutturals with the mouth shortened—that is, a labial utterance is very conveniently combined with a *u*, as *mu, fu, pooh;* and a guttural combines readily with an *ee* or *ay* sound, as *kee, kay; ehs*. So there is a certain conformity of position between the palatals and the middle vowels *ay* and *oh*, but this is not sufficient to make a conspicuous harmony out of their combinations. The training of the human voice is, however, in general, sufficient to get over the partial incompatibilities here spoken of, and to enable it to combine labial consonants with guttural vowels without any sense of difficulty. The word *peep* will seem as natural to most people as *poop*. But it is possible that this principle may have acted to some degree in the early formation of languages.

We have already spoken of certain cases of the union of consonants, and have described the classes of consonants which can most readily go together in the same syllable. A different case of union arises when syllables are joined together in words. The union of different syllables is apt to be less perfect than the union of vowels and consonants in the same syllable; but the endeavour of all highly-improved languages is to make the one as perfect as the other. The Greek and Latin uniformly adopted the plan of changing the first or last letters of syllables to make them join easily with others. The preposition *in* becomes *im* in Latin when it has to go before a word beginning with *m:* thus we have *imminent* instead of *inminent*, which would have been a harsh combination. So the word *syllable* itself, which is Greek, begins with the preposition *syn*, which would have made *synlable;* but the *n* has been changed into an *l*, and the sound of the word becomes much more melodious. The most perfect of all ways of uniting two syllables is to make them join upon the same letter; the union in this case even exceeds the union of the most nearly related vowel and consonant; in fact, it is a complete fusion. When the two touching letters are not the same, the next best fusion is when they are of the same class, as mutes, vocals, aspirates, &c. Thus in *picture*, the *k* and *t* sounds being both mute, make a much more natural succession than if one had been mute and the other vocal, as *pikdure;* the change from the guttural mute *k* to the palatal mute *t*, is far less violent than the change from the guttural mute to the vocal palatal. So the word *diphthong*, whose proper pronunciation is *dipthong*, would be more easy to utter if it were *diffhaug*, which is in fact a very common way of pronouncing it. The Greek word for seven is *hepta;* but in the word *hebdomadal*, derived from it, there is a change from the mute to the vocal form of *both* consonants: such a combination as *hebtomadal* is not to be found in the Greek language. For mere shortness of pronunciation, the fusion of syllables is had recourse to, as well as the omission of letters that can be spared, or whether they can be spared or not; and this practice, which prevails in all languages, has the greatest sweep in those which have not been fixed by alphabetical writing, written literature, and a code of grammatical rules. Thus in English the proper name *Saint Clair* becomes *Sinclair;* the ancient termination *like* has been universally shortened into *ly; goodly, truly*, are instead of *goodlike, truelike*. Additional syllables are, moreover, swamped entirely by breaking down the middle barrier of consonants, or by absorbing the vowel of one of them: the first is common in the ancient languages, the last is seen abundantly in English, as in *cleft* for *cleaved, learnt* for *learned*.

The interval between word and word is of course more decided than between syllable and syllable. There is supposed to be something like a distinct pause of the organs between one word and another. But there is a sufficient closeness in the articulation of successive words to demand a certain degree of attention to the harmonising of the letters that are concerned in the transition. It so happens, however, in this case, that a harsh transition is formed by the very succession which is the most flowing of all between two syllables—that is, when one and the same letter ends one word and begins the following: as when we say—has seen, run now, call low. This succession is too flowing to admit of the necessary pause, and hence the awkwardness of it. In languages where vowel endings of words are common, there is a regular practice of eliding or sinking one when two come together—one of them at the end of the first word, and the other at the beginning of the word following; it being in general not so easy to sound two vowels in close and yet distinct succession, as when a consonant divides them. In English, this principle is observed in the use of the indefinite article, which is *a* before a vowel, but *an* before a consonant.

The vowels and consonants which are allowed to go together, and the laws that govern the succession of the various letters, are different for different languages, and have to be stated among the peculiarities of each. This is called the vocalic harmony of a language, and we shall see examples of it afterwards.

Words are sometimes of one syllable, sometimes of two, three, four, five, or upwards. When a word has several syllables, it is usual to put more stress on some of them than on others in the act of pronunciation; the superior stress being called *emphasis* or *accentuation*. In English, the singling out of one syllable for especial stress is carried to a very great length, perhaps farther than in any other tongue; and the effect of this is to make our speech the extreme opposite of singing or chanting, which lays equal stress on all syllables alike, and varies only the time and the musical note of each. Thus our pronunciation of the word *difficulty*, is as far removed from the action of singing as any utterance can be. The Latinised languages of the continent—the French, Spanish, and Italian—have a more near approach to the sing-song; and we are taught to believe that the ancient Latin and Greek had still more of the same peculiarity; at least we are accustomed in our pronunciation of these languages to abstain from the discriminating emphasis of our own speech, and to drawl the successive syllables of the words, keeping as closely as we can by the sole distinction of long and short.

In English, it does not always happen that each word has an emphatic syllable. The monosyllabic particles, *a, an, the, to, and*, &c. are rarely emphatic: they usually fall in with the unemphatic syllables of the adjoining words. Thus when we say, 'Beauty is a thing to be sought for and admired,' there are only four syllables that receive a full emphasis. Among the others there is a slight difference of accentuation, but at best it only rises to a secondary emphasis; as in the word *is*, coming between the short syllables *y* and *a*, and in the first syllable of *admired;* it being impossible to pronounce a train of short syllables without increasing the stress on every second or third.

It is probable that one of the changes gradually coming over human speech has been from the music of tone to the music of syllables and varied emphasis; in other words, we have advanced more and more into the proper qualities of speech as distinguished from song. To produce a succession of articulate vowels and consonants that harmonise in their utterance and effect on the ear, and vary the stress of the voice in pronouncing them, has nothing whatever to do with the art of giving pleasure by a succession of musical notes; and consequently the perfection of each follows its own peculiar laws without interference with the other.

UNIVERSAL GRAMMAR.

Under this head we have to consider what are the essential parts of speech common to all languages, and how far they seem to be formed out of one another. Notwithstanding the innumerable varieties of dialect that we find in the peopled earth, there are some respects wherein all languages must coincide, from the identity of human nature and the external world. The things to be expressed are in a great measure the same everywhere; the organs of human speech and hearing, and the structure of the human understanding, have an essential similarity throughout the human family. The purposes to be served by speech are very much alike; and the attributes of perspicuity, clearness, brevity, strength, beauty, &c. which give it all its efficiency, are attained by very much the same devices.

1. In the first place, language must be governed by the nature of the things to be named and described by it. If the world around us were very different from what it is, all our sensations, thoughts, reasonings, and modes of discourse would be different. In a dead frozen universe there would be no need for active or passive verbs; if no two things were alike in any respect, there would be no such thing as general terms; if every object had only one single quality, or affected the human mind in only one way, adjectives and adverbs would be wholly unknown. The same dependence holds between the parts of speech and the wants, desires, purposes, and peculiarities of human nature. If there were no dependence of one man on another, and no common action, we should not have an imperative mood nor a plural number. If God had not made man male and female, the three genders would have been reduced to two. The tenses of the verb are a device expressly adapted to a being who looks both before and after.

Mr John Stuart Mill, in his great work on logic, has given an account of the fundamental kinds of names and of nameable things, which serve as a basis of universal grammar as well as of logic. A name may be defined as an articulate utterance associated with a thing, for the purpose of recalling the thing to ourselves or suggesting it to others. Articulate utterances, we have seen, are divided into letters, syllables, and words; these last being identical with intelligible names. It is not, however, universally true that each word is the name of a single thing, and neither more nor less: it often takes several words to name a single thing, as when we say, 'a burial-ground,' 'a wolf in sheep's clothing,' 'an officer that distinguished himself at Waterloo.' The most perfect scheme of naming which has yet been devised for any class or species of things—that is to say, the nomenclature of natural history—employs uniformly two names to each object, as *populus alba, the white poplar*.

The first division of names, according to Mr Mill, is into individual and general; the second into concrete and abstract; the third into positive and negative; and the fourth into absolute and relative: but for the detail of these we must refer the reader to the number on LOGIC (73).

The things denoted by names fall under two great classes, which it is equally important to recognise both in grammar and in logic. The one class refers to objects considered simply as existing, or as conceivable, each by itself apart; the other class contains the names of affirmation, which uniformly connect together two or more objects. Thus the various feelings, thoughts, passions, volitions of the human mind, the mind itself, the things without us, forming the external universe, may each have a name appropriated to it, and connected in our minds by association, so as to recall the thing or convey the notion of it at pleasure. For example, when we simply pronounce the names sweetness, recollection, anger, resolution, star, pint, horse, John, we do nothing more than fix attention upon the objects named: beyond assuming their existence, and reviving the idea of them, we do not say or affirm anything about them. This class of names is well known in grammar as the *nouns*. But when we bring two objects together, and declare some invariable connection to exist between them, we make an additional effort of mind, and we require a mode of marking it. Thus when we say, 'honey is sweet,' we name two objects—one an external substance, the other a sensation: but we do something more—we bring them together in such a way, that a listener would not merely have the notions of both brought to his mind, but would be induced to put himself into a train of actions in consequence. Sweetness is a thing to excite human desire; and if a peculiar object is declared invariably to possess it, and if that object is accessible, it is sought after and used for the sake of the sweetness. Now a word that connects two different things with so secure a bond, that we feel sure of finding both if we find one, is a totally different thing from a mere name of an isolated object: the one indicates only a conception, the other causes belief, trust, confidence, and the readiness to pursue a train of actions in consequence. This second class of names is termed in grammar *verbs*, or words by pre-eminence. *Action* resides in them, whereas in the nouns there is nothing but mere contemplation. All the powers, properties, activities, and laws of nature require verbs in order to express them; there is no such thing as truth, or its opposite, falsehood, in any set of words not containing a verb. Hence verbs are essential to knowledge, belief, and action; and they grow out of the effort to express or indicate these. All the sciences have verbs for the connecting links of their propositions; all history and narration demands the use of verbs; all commands, purposes, desires, volitions, must be expressed by their help. 'Circle' is a mere thing, exciting only a notion; 'a circle contains the largest space of any figure with the same circumference,' is a proposition, a truth, a law of nature, a thing that human beings can rely and work on; and a verb is essential to its expression: omit the word 'contains,' and the adamantine link is dissolved out of it; it is neither a truth, nor a law of nature, nor a groundwork of human action: it is two notions set loose from one another. As nature has bound bodies and properties together by the ties of creative energy, so verbs bind them together in human thought and confidence.

The distinctions of names into individual or general, concrete or abstract, positive or negative, absolute or relative, do not so uniformly apply to verbs. Verbs can scarcely be individual to the extent of being proper names, like the names of persons among nouns; but they may have various degrees of generality. Thus 'burn' expresses a certain action; 'combine chemically' expresses a mere general and comprehensive action. The auxiliaries *have, do, shall, may*, may be reckoned verbs of a highly abstract nature. The most general or abstract of all verbs is the verb 'to exist,' or 'to be.' The distinction of positive and negative applies more directly to verbs than to nouns, inasmuch as these terms imply *affirmation*, which is the essence of the verb. Thus we have to make, to unmake; include, exclude; burn, quench; is, is not, &c. Verbs are absolute and relative when they correspond to absolute or relative nouns: thus when we make the noun 'father' a verb (to father), it is still a relative word.

Since all possible information or knowledge could be expressed by means of nouns and verbs, it has been supposed by many grammarians that these are the two

fundamental parts of speech, and that all the other parts mentioned in grammars—the adjective, pronoun, adverb, preposition, and conjunction—may be resolved either into nouns or into verbs, and actually grew out of them in the progress of human speech. Thus Horne Tooke pointed out the verbs which he conceived to be the originals of the words—*and*, *but*, *unless*, *that*, &c.; and it is generally admitted that his analysis was to a great extent very successful. But recent philologists, German and English, have decisively shown that the pronouns and the leading prepositions had an origin quite independent of any other class of words, and were not derived from either nouns or verbs. Although it is true that nouns and verbs may serve all the logical purposes of speech—that is, may suffice to express all kinds of truth, and all matters of knowledge and fact—yet the *dramatic* nature of speech demands something more. Language is in its very origin the system of forms observed between two intelligent beings when directing their common attention to some third object; and it must act so as to enable the one person to indicate to the other what and where is the thing to be attended to. It is impossible to divest human speech of this character of a threefold reference. It is only in the most advanced stages of the human reason that truth assumes a logical, to the exclusion of a dramatic shape, or that the personality of the speaker and the person spoken to is omitted from the forms of statement. 'Do *thou* give *me to eat*' is a genuine expression of primitive man. 'The planets move in ellipses' is an expression of the human understanding after ages of scientific and logical cultivation. Hence among the earliest terms of language are to be found words for denoting—*me*, the speaker; *thee*, or *you*, the person spoken to; and *him*, *her*, *it*, or *that*, the person or thing spoken of. The advance of ceremonial politeness, as well as of scientific cultivation, causes a departure from the most direct mode of representing self and addressing others: thus *I* passes often into *we* even for a single person, or into the indefinite pronoun *one*; and in writing, to the *writer*, the *author*, or the *undersigned*: and *thou* or *thee* passes into *you*, or is substituted by the proper name of the individual; and *you*, in a case of plurality, is converted into some generic name of the assembly—as men, brethren, countrymen, &c. In like manner the third person comes to be dismissed in favour of the actual name of the object, and is then employed only to save too many repetitions of this name. In consequence of these substitutions, and the throwing of the pronouns into a secondary position, it was not unnaturally supposed that names were invented first, and pronouns afterwards; but it is now ascertained that the contrary is the fact.

The celebrated German philologist Bopp, who was the first to discover the distinct origin of pronouns and prepositions derived from them, states that, 'From the dissection of the pronouns, and of the prepositions connected with them, we get the following monosyllabic stems, partly consisting of a mere vowel, which either occur in Sanscrit only, or are found in the connected European languages with more or less exact correspondence in form—namely, *a*, *i*, *u*, *ê*; *ka*, *ki*, *ku*; *na*, *ni*, *nu*; *ma*, *mi* (*-μι*), *mu*; *ya*, *yu*; *va*, *vi*: *ta*, *da*, *sa*. The compound pronouns—meaning thereby not derivatives like *lâ-vat*, "so much;" but primitives, which the grammarians consider as simple, but which we have endeavoured to reduce into their real elements—show as their first member in Sanscrit a stem consisting of a single vowel; they are the following—*a-va*, *i-va*, *ê-va*, *a-na*, *ê-na*, *a-da*, *i-da*, *ê-ta*, *ê-ha*, *ê-sha*.' Mr Donaldson,* who has followed up and extended this discovery, maintains that the three distinct persons and positions essential to an actual dialogue are expressed in the Indo-European languages (which include Sanscrit, Persian, Greek, Latin, German, English, &c.) by words that may be reduced to the three mute consonants, as their characteristic sounds, varied by the vocal, nasal, and aspirate forms of each: thus the labial *p* he ascribes to the first person, with its corresponding mute and vocal aspirate, which yield with a connected vowel, *ma*, *mi*, *mu*, *va*, *vi*. The guttural class of consonants he considers the originals of the second personal pronouns, giving *ka*, *ki*, *ya*, *yu*, *i*, *u*: and the dentals furnish the third person, or the remainder of Bopp's roots, *ta*, *nu*, *ni*, *na*. It can be shown that these forms prevail in one or other of the languages of the Indo-European class, and are at the foundation of all the pronouns, and many of the prepositions and numerals, as well as of the inflecting syllables of nouns and verbs. As they are the most simple, they may be reckoned among the very first and most essential utterances of human speech: they are the earliest auxiliaries of inarticulate signs and gestures, and the first sounds that become significant and intelligible. Being in existence from the very beginning, they would be extensively mixed up and combined with the other classes of names—the nouns and verbs proper—and would give the means of varying these to suit variety of position, circumstances, and other particulars. The first person denoting *self* would be extended to mean *here*, as distinct from *there*, which would be marked by the third person; and the second person would be connected to denote something intermediate, *near here*, as distinct from both *here* and *there*. Such is the explanation given of the common origin of the pronouns and the prepositions of place—such as *to*, *from*, *near*, &c.

Nouns, verbs, and pronominal words, being considered thus the primitive classes of names, or the primary parts of speech, we have next to show how the other parts of speech, as well as the various kinds and inflections of the primitive words themselves, are formed from these. According to the usual classification, invented by the Greek grammarians, and adopted by the modern nations, the parts of speech are—the article, noun, adjective, pronoun, verb, participle, adverb, preposition, interjection, and conjunction.

But for our present purpose, it is more convenient to arrange the parts of speech according as they fall under the three great divisions—of pronominal words, nouns, and verbs. Under the first, Mr Donaldson classes personal and other pronouns, numerals, prepositions, negative and other particles; under the second, nouns, certain of the prepositions, and adjectives; under the third, verbs and all their tenses, moods, conjugations, auxiliaries, and participles.

I. The personal *pronouns* are the words, *I*, *me*, *we*, *us*, *thou*, *thee*, for the first and second persons; and *he*, *she*, *it*, for the third person, which are also what is called demonstrative pronouns. The oldest form of the first person in all the languages of the Indo-European stock is *me*, or an utterance whose essential part is the labial consonant *m*. This sound we must regard as the natural and primeval expression of our common progenitors for denoting one's self; it is perhaps among the very first efforts of human speech, or one of the first sounds that was connected with a meaning. The nominative case of the pronoun *I*, used when an action begins with one's self, as the cause or mover, is of secondary origin: when its forms, as seen in the Sanscrit and classical languages, are examined, they seem to show that it was formed out of the *m*, with certain additions. It is in Sanscrit, *aham*, which is resolved into three parts *a-ha-m*, each with separate force: the first *a* is supposed to be a form of the demonstrative pronoun, corresponding to our *that*; *ha* is a relative, like *who*, and *m*, the radical of *me*; the whole expression, therefore, is an emphatic *me*, *that which me*, *me* as distinguished from all other agents, movers, or causes of the act in question.

The plural *we*, when we ascend to its most primitive form in Sanscrit, is supposed to be resolvable into 'I and you here;' it is *va-ya-m*: *va* being one of the labial utterances of the first person; *ya*, a faint guttural, standing for the second person; and *m*, a first

* See Donaldson's New Cratylus, a very able and important philological work, from which the above exposition of pronominal roots, &c. has been chiefly derived.

personal root, meaning also the *here*. By a like analysis of the most primitive form of *us*, it has been supposed to mean *the here taken together*; in Sanscrit it is *asmân*: the *s* sound shows the presence of a primitive meaning which came to have the force of *together*, as in the preposition *syn*, *with*, which we find in many of our words obtained from the Greek; for example, *synthesis*, *synonyme*, *syntax*, &c.

A similar method is applied to show how the second personal pronoun, with its plural and cases, arose out of a primitive guttural consonant, which had the force of *thou* and *there*, but which in our language has become a dental vocal aspirate. The *r* sound, in our *there*, is also a primitive element of the Indo-European stock, and indicates motion: it is of great use in forming words of motion like *from*, *fro*, by combining with the sounds of mere position; *from* being like the Greek *para*, and being considered as made up of a labial, or first personal word, and a sound containing *r*, its literal meaning would be as we find it, *motion away from me or from here*.

The third personal pronoun, and the demonstrative element, or the thing by which the person speaking points out to the person addressed the subject that he is speaking of, is in Sanscrit *sa*; in Zend or ancient Persian, *hô*; in Greek, *ho*; in Gothic, *sa*; with us, *he*, *hit* (old form of *it*). Like the first and second persons it is a primitive utterance, and the source of various other words. It gives birth to the reflex pronoun *se*, *self*; *himself* being of the force of *him where you are*. The relative *who* appears likewise to be derived from it; and the turn of thought leading to the transition seems not unnatural. The Latin *qui*, *kui*, contains the most primitive sound of the second person—the mute guttural *k*. The interrogative pronoun *who*, *quis*, and the indefinite pronoun *any one*, which in Greek and Latin are the same as the interrogative, must also be supposed to spring from the same source.

The *numerals* have been shown to be derived in the first instance from the pronouns. The vulgar expression of 'number one,' meaning one's self, is the counterpart of the original derivation of *one* from the first personal pronoun, as is proved by examining the old languages. Another derivation of *one* has been traced from the word *moon* or *month*, as one of the divisions of the year; it being found that, besides the decimal notation derived from the fingers, there has also been used a duodecimal notation from the courses of the moon and sun. Number *two* is the second personal pronoun, *thou*. The third numeral has in all our tribe of languages the two consonants *t* and *r*; the first being the simplest root of the third personal pronoun, and the other the sound for motion away from: it is something like *it away there*. The *four* seems to have been a combination of the original forms for *one* and *three*. The only others of the ten numerals supposed to be formed from pronouns are *six*, *seven*, and *eight*: of these it is thought that the first has been originally formed of *three three*, and the second of *three four*. For *five* and *ten*, and their multiples, it has been proved that the same root as signifies the *hand* has been extensively employed; the only one of them where it appears in our language is *hundred*. *Ten* can be shown to come from *two hands*. The *nine* is a form cut down from *one less ten*, just as *eleven* has been *one more ten*.

The large numbers *thousand* and *million* seem to be names of vast aggregates. The Greek for *thousand* is derived from *chilos*, a heap of fodder; for ten thousand it is *myriad*, or a flood of water.

The ordinals *first*, *second*, *third*, &c. are derived from the cardinals in the early languages by means of a termination also used as the superlative termination of adjectives (in Greek, *tos*), meaning apparently the last of a series going on from the speaker.

The word *middle*, *medius*, is one of the many derivatives from the *mê*, the *here*.

The *prepositions* have been analysed down to pronominal stems combined with one another, and with the syllable *ra*, signifying motion. Our *from*, *fro*, the Latin and Greek *pro*, is an obvious instance of the combination, being a labial for the first person or the *here*, and an *r* for motion away from. In the classical tongues and Sanscrit, a like analysis has been made of the others. Thus *me-ta*, *here-there*, expresses *with*, and also close succession and change. One preposition in Greek, *dia*, in English *through*, is derived from the second numeral *two*, which gives it its meaning of division into two parts.

Of the parts of speech called *particles*, the most prominent is the negative *no*, *not*. The consonant *n* is the chief sound of this negative through all the Indo-European tongues; and it is supposed to be a strong form of the third personal pronoun, an emphatic *there*, in contrast with *here*, or an expression of *not here*. *Yes* is a form of the second personal pronoun. The disjunctive *or* is derived from the expression of removal or separation belonging to the *r* sound.

II. Under the head of the *noun* we include also the adjective. In both we have a system of genders, cases, and numbers; and in the adjective the comparative and superlative degrees.

III. The *verb* presents the varieties of persons, numbers (singular and plural), tenses, moods, voices, and conjugations.

Both nouns and verbs are compound words—that is, any word coming under either of them may be divided into two parts: one is called the *root*, and the other is an addition to it before or after. The root may be supposed to express the naked thing for which the word stands; the additions are for the purpose of expressing circumstances regarding it, such as may attach to it in common with any other object. By these additions the cases and numbers of nouns are formed, and the tenses, &c. of verbs. Thus if the English word *pure* were supposed to be a root, the words formed by adding syllables to it—such as *purity*, *purification*, *impure*, *purest*—would present examples of the addition of new general meanings to the original idea; that is, meanings that may be added to a great number of different primitive ideas; for the same terminations *ty*, *fication*, *est*, and the prefix *im* or *in*, may qualify adjectives at large. One of these terminations, *fication* (itself a compound), is seen at first sight to come direct from a word that can act a separate part—namely, the Latin verb for 'to make,' seen in *faction*, *fact*. The English word *make* is used in exactly the same way, as in *merry-making* (compared with *jollification*).

This example will show the nature of inflected words, such as the cases of nouns and the tenses of verbs. These are made up by adding to the root one or more syllables, which are themselves significant names, although often cut down, for the sake of rapid and easy pronunciation, so as to become difficult to be identified or traced to their original. Where the original was a syllable of several letters, the inflected syllable of the compound may be only a single letter, or may disappear altogether, while leaving its meaning behind it.

The Greek, Latin, and Sanscrit languages were inflected to a very surprising degree. For 'they might have written,' the Latin can say in one word, *scripsissent*, which is a coagulation or conglomeration of words expressing four ideas, each having a separate word in English. It is still possible to trace each of them, notwithstanding the shortening and other changes that have taken place. The bare root, or word for 'write' in the abstract, is *scrib*; all the rest of the letters are employed in giving the circumstances of conditionality, past time, and action, by a plurality of persons.

The *noun* in English has only three cases, and of these the nominative and objective are spelt the same. The possessive is formed by an inflection containing the letter *s*. The plurals are in great part formed by adding a syllable, also marked by the presence of *s*. In the Greek language there are five cases, in Latin six, in Sanscrit eight; that is, besides being inflected to signify possession, a noun in these languages is inflected to signify other relations, such as those we denote by our prepositions *to*, *by*, *with*, *from*, &c. If

we take the Latin noun *homo*, a man, we shall find it to be declined thus—

Singular.		
Nominative,	*homo*,	a man (as in 'a man goes').
Genitive or Possessive,	*hominis*,	of or belonging to a man.
Dative,	*homini*,	to a man.
Accusative,	*hominem*,	a man (as in 'I saw a man').
Vocative,	*homo*,	man (used in calling out to a person).
Ablative,	*homine*,	by, with, or from a man.

Now grammarians have been able to show what the words are that have most likely been added to, and fused with, the roots of nouns, to make these different cases. For example, the accusative is supposed to be formed by the locative particle, whose characteristic letter is *m*, signifying in a place, or placed, fixed, situated, which is itself of pronominal origin. The dative is supposed to be filled up by the addition of an ending signifying *in* or *on*, and the ablative by a word derived from the second personal pronoun (the thou, or near here) with motion, so as to come to mean away from; the genitive or possessive is considered as merely another form of the ablative, and made up on a similar idea. In the Indo-Germanic tongues, the *s* is a prevailing letter in the genitive termination, as we see in English. The plurals, which are also frequently in *s*, have not been very distinctly accounted for. With respect to the genders, which affect both nouns and adjectives—and in the classical languages have each a separate termination—it is supposed that the neuter is merely a diminution of the masculine, whereas the feminine is formed by a separate addition, which in Sanscrit is the long *i* sound, mostly changed in Greek and Latin to *a* and *e*. The terminations of the masculine and neuter are apt to be short, while the feminine is long. *Bonus, bona, bonum*, are the masculine, feminine, and neuter of the Latin adjective for *good*; *bonum*, the nominative and accusative of the neuter, is the accusative of the masculine.

The *adjective* is merely a form of the noun, expressing in a somewhat abstract way the class peculiarity of the things designated by the noun. A noun, if not an individual or proper name, is the name of a class of objects that have some common features—as *man, lion, water*; that is to say, there are certain constant peculiarities attached to each object that we name—a man, a lion, water; and when we wish to speak of the peculiarities by themselves, we alter the form of the noun, or use it without alteration to signify these: thus *manlike, human*, express simply the attributes of man, and not the object—man. These words are in the form that may be used in predication or affirmation, as when we say 'forgiveness of injuries is manlike,' or that 'such a one is lionlike.' This class of names is what we call adjectives: they qualify nouns, or help nouns to make out a desired meaning—as '*fair* hair;' and they make the predicates of propositions. But a great number of adjectives are derived not from nouns, but from verbs, or from the words expressly adapted for making affirmations or propositions: thus *just* is from the Latin verb to *order*; *right* from the verb *rego*, to rule; *left* is from the verb to *leave*. These adjectives are of the kind called participles, and are reckoned a part of the verbs they come from, being one of the regular products of the verb, which in all languages makes provision for supplying one or more adjectives having its meaning, and capable of qualifying nouns. We say, 'he has given me a *torn* book,' where the word *torn*, derived from a verb, seems merely to assist in defining the character of an object that we wish to express. So '*a ruined* man,' '*a fallen* house,' '*a blown* bladder.'

Adjectives in qualifying substantives, in the inflected languages, become masculine, feminine, or neuter to harmonise with the gender of the substantive. This is still seen in French: in English it is unknown.

The comparison of adjectives is one of the earliest products of language. In the Indo-European languages the letters *t r*, one or both, are almost the invariable consonants of the comparative degree; they may be derived from *ta* and *ra*, the third personal pronoun, and the particle of motion, as if implying one thing farther off than another. The superlative in its oldest form is *ta-ma*, the third and first personal pronouns, interpreted to mean the last in a series; in Greek it is *tos*, in Latin *mus*, in English *st*.

We have already described the intrinsic character of the *verb*. We must now endeavour to show how its various parts are built up by such additions to the root as serve to express all the differences of person, number, time, condition, and action, which may attach to any one verb.

The person endings of the verb, or the syllables for expressing *I, thou, he*, singular, plural, and dual, have been done away with in modern languages, if indeed they were ever used in all of them, and in their stead the actual pronouns are used. We say, 'I give,' when the Greeks would have said *didōmi*; and for the other persons a single word expresses verb and person in Sanscrit, Greek, and Latin. On examining the syllables which distinguish the persons, it is found that they are the three personal pronouns in their original form as used in the objective case: in their oldest shape they are the syllables *mi, si, ti*: *dido-mi*, I give; *dido-si*, thou givest; *dido-ti*, he gives. Great modifications and abridgments came to be made on these primary forms, but they still continued to be traceable. Thus in Latin, *m, s, t*, are the ending letters of the three persons singular in most of the tenses of the active verb *dabam, dabas, dabat—I, thou, he, was giving*. The tenses of the passive voice—as *didomai*, I am given—are supposed by some to have had originally for their terminating syllables a stronger form of the same pronominal syllable as makes the endings in the active voice: the *mai* may be an abridgment of *mami* or *mama*, a doubling or more intense expression of the *me*. The oldest form of the ending of the first person plural is *mes*, which may be regarded as made up of *me* and *se*, the first and second pronouns, or 'I and you,' which is not an improbable derivation of the expression for *we*. In the passive voice this person contains in Greek a *th* sound (*methon*), which is thought to belong to a locative particle, or a particle of place, and to furnish some contribution to the passive meaning—that is, the meaning of being acted upon, or being fixed in a position, and therefore passive, or capable only of being exposed or subjected to action. This idea of adding a locative particle to make the passive voice generally, is a supposition thought to be confirmed by the use of the letter *r* to make the passive tenses of the Latin verb. The second person dual and plural in Sanscrit and Greek is evidently derived from a repetition of one of the forms of the second person singular. In the third person plural termination, a syllable equivalent to *they* has been traced through several languages.

Next to the formation of the persons is the making of tenses, or forms of the verb, to signify the varieties of time and action. An act may be considered, and requires to be expressed, as present, past, or future; as complete or incomplete; as momentary or continued; and all these properties are expressed in the inflected languages by syllables added to the naked root. Mr Donaldson has shown that, in the Greek, continuance is denoted by a reduplication of the chief syllable of the root. Thus *do* is the root of 'give;' and the present tense, meaning 'I am now continuously giving,' is *didomi*; and the perfect, 'I have been giving up to the present time,' contains the same repetition, *dedoka*. For past time the letter *e* is prefixed to the verb, a particle signifying what is remote or at a distance. For future time the letter *s* of the second pronominal element is mostly what is used, and may be interpreted 'the near,' or 'the coming.' The position of the particle of past time at the beginning, and of the particle of future time at the end of the root, serves to assist each in pointing out the direction that it has to express; the prefix is most proper for the past, the suffix for the future. The future, the indefinite past (as I gave), and the perfect, have all for their terminations some

form of the second personal pronominal word. In French, an indefinite past tense is regularly derived from the future—as *lirais*, from *lirai*.

In English, the system of inflecting is very limited, and must have been so always. There is only one tense inflection, and that is for converting the present into the indefinite past; or we may say that an English verb has only two tenses; all the other varieties of time and mood being made up by the auxiliary verbs *do, have, will, shall, can, may*. There are two different ways of forming the past tense from the present—one by adding the syllable *ed*, which often passes into a *t* sound; the other by a change in the internal vowel of the verb. The first is the simplest, and is called the weak declension; the other is called the strong declension. The use of *ed* must be explained on the principles already illustrated in the Greek verb: it is a significant syllable, implying some such idea as distance, or a thing done and departed. It may spring from the same original root as our words *there* and *thou*, which are characterised by the aspirated *d*. The other change, as in *come, came, speak, spake, fall, fell*, is more difficult to trace to its first origin: it is analogous to the style of inflection in the Hebrew language as distinguished from the system of the Latin, Greek, and Sanscrit; which last proceeds by adding syllables, as in the case of the *ed*. There must no doubt be something natural in altering the stress and direction of the voice, as by changing from a short vowel to a longer, or from a weak to a strong, when we wish to distinguish a thing past and gone from an act now going on; and although the impulse which leads to internal inflection is different from the one leading to external inflection, being more emphatic and determined, it is still a genuine and not inexplicable impulse of the human mind. The past termination *d* is common to all the Gothic languages.

The various moods of the verb—the subjunctive, optative, imperative, and infinitive—require and admit of explanations of the same tenor as the tenses, especially in the inflected tongues. Our own language, which forms the subjunctive and potential moods by auxiliaries, shows the connection of these with the tenses of the indicative: thus from 'I shall go,' or the future, we have 'I should go' of the conditional or subjunctive mood. The imperative mood is generally a very naked form of the verb—that is to say, it contains the root with a very weak addition when there is any at all. The infinitive is the form suited to the grammatical use of the verb as a noun; the participle is the form of the verb that acts the part of an adjective. The infinitive, in our language, *to do, to come*, expresses the mere state of action without circumstance of any kind; the participle expresses the state of action without reference to person, but with the other circumstances that would be expressed by a tense, such as time present or past, action finished or unfinished. In English, there is only one inflected participle, which ends in *ing*. It corresponds in time and action to the present tense: *I come* and *coming* are the same in these two respects. A past participle active is formed by the auxiliary *having*, and the past tense *come;* a past participle passive by *being*, and the same past tense. In Greek, there are numerous participles and infinitives both; the infinitives being varied to suit time and action. The English participial termination *ing* is said by Richardson to be formed by the Anglo-Saxon infinitive *an*, and the termination *ig*, which is reckoned of the same primary meaning as the past termination *ed;* in other words, the participle or adjective form of the verb arose out of the infinitive or noun form.

The *adverb* is a form of the adjective, used in qualifying verbs as the adjective qualifies nouns—as 'he fought bravely.' The termination *ly* is the word *like*. Verbs not being susceptible of masculine, feminine, and neuter forms, as in the case of nouns, adverbs cannot have the same inflections of gender as adjectives, neither can they have the case inflections. They are mostly derived from adjectives; but some of them, as *now, then, here, there*, must be reckoned of pronominal origin.

The *prepositions* have already been alluded to as the immediate offshoots of the pronouns. In English, they are *in, on, of, at, up, by, to, for, from, till, with, through*, &c. They can all be traced to a few simple relations of position, such as we have seen in describing the primary pronominal situations.

The *conjunctions* were successfully identified by Horne Tooke with the imperatives of verbs: *and* is *add; if, give; yet, get; though*, from *allow; but, be out*, &c.

Interjections can scarcely be called parts of speech: they are not the names of objects, nor are they used for giving information about anything. They are mere isolated exclamations, like the howl of a dog, or the song of a bird, inspired by some present feeling or sensation, but not subject to the laws of articulate speech. Some forms of them are derived from regular names of objects, such as the various forms of interjaculatory oaths and asseverations.

ORIGIN AND PROGRESS OF LANGUAGE IN GENERAL.

Having discussed the various classes of words called parts of speech, and shown that there are certain of them that give birth to all the others, we have now to consider the actual process of the invention, and gradual improvement of language as a whole. The first beginnings of human civilisation are necessarily very obscure, from their being anterior to history, and unlike any experience that we now possess. This is almost as true of every other department as of language. The first use of tools, the origin of the forms and ceremonies of social intercourse and religious worship, the commencement of the fine arts—of music, dancing, painting, sculpture, architecture, &c., the primitive organisation of human society, the beginnings of scientific speculation and knowledge, are all exceedingly dark and doubtful. We can but dimly imagine how humanity made the first step in any great walk of human life; and yet we have experience enough of the inventive genius of man, to know that all that has been done is within the range of its powers.

It has been usual to call language a thing of purely divine origin, proceeding as directly from the Creator of the world as the being of man himself. This opinion has been sought to be supported partly by a peculiar mode of interpreting the Mosaic account of the creation, and partly by the supposed incapability of mere human genius to give birth to such a wonderful structure. But this view cannot be maintained without endless perplexities and assumptions. We cannot show that the difference between language and other inventions is so great that the one surpasses, while the other comes within, the powers of the human mind; and so much of language can be shown to be the result of man's own agency, that it is impossible to draw any line between what he received by inspiration and what he formed by art. At all events, if the origin and progress of language is to be subject of investigation and inquiry, like the history of any other branch of civilisation, we must proceed on the principle, as put by Chevalier Bunsen, that 'in philology, as in geology, no forces are to be assumed but such as are still known to operate.' If this is not granted in reference to any subject, it is put beyond the bounds of the human intellect. We must endeavour to determine how far the inventive capacity of man, so wonderfully exhibited within the periods authentically known, and from its very nature equally strong at all stages of civilisation, may have sufficed to originate the machinery and institutions that preceded the dawn of recorded history. It must be distinctly kept in view that the ancestors of the civilised races were not savages in the same sense as the Africans, New Zealanders, or Red Indians, who must be regarded as the imbeciles of the human family: they were men of the same natural capacity as their own descendants, and produced, every now and then, superior geniuses in all departments of life, and by these they were initiated into all the works of improve-

ment that they handed down to their posterity. Original genius is most powerful and fresh in the infancy of the world. When a great deal has been once established, the necessity of creation is less felt, and the force of routine is opposed to innovations. But an inventive mind, in circumstances where everything has to be done, works without check or obstruction from existing interests, and puts forth its highest powers with full effect. The invention of a vocabulary of words is not a thing utterly unknown to modern men. The technical names of trades and crafts are the invention of the workmen, and are often as independently created or invented as the very earliest words of human speech. No one will venture to say that the slang of thieves is of divine origin, and yet a great part of it is wholly underived from the language of common society, and purely the invention of the profession itself, or rather of that class of original minds in the profession whose genius lies in the way of expression. We must therefore endeavour to account, on the principles of human nature, for the invention of words, and their combinations; or we must show how it is possible that the thing could have been done, and confirm our explanation by what is actually found in the languages with the origin of which we are acquainted.

I. In the first place, the principle of imitation can account for the invention of a certain number of words; especially such as are the names of sounds, or of things that have some sonorous accompaniment or effect. Thus *cuckoo* is a palpable imitation of the cry of the bird. *Buzz, whizz, crack, clap, hiss, murmur,* are also produced by the force of direct imitation. All men have this faculty, and some men have it in a very high degree: and it is possible to produce by the human voice an articulate sound similar to, or in imitation of, the greater number of natural sounds. A single man of fine ear and delicate organisation—such a man as we commonly find in a good speaker or actor—could furnish imitative articulations for sounds to any extent that might be required; and we can have little doubt that the existing imitative sounds were first suggested by such more than ordinarily-gifted men. It is not every one that could create such imitations as *crack, buzz, hiss, rumble,* &c.; but every tribe among the superior races would now and then produce an individual capable of the effort.

The names of the parts connected with the articulating organs themselves would be formed by sounds associated with those parts. Thus it might be expected that to express the *lips* and *mouth*, *labial* letters would be chosen; to express the *teeth*, we ought to find a *dental* sound; and for the *throat* something *guttural*, as appears from the fact in all these instances. So the words *gape, yawn, chew*, are most obviously formed by articulations as nearly as possible coinciding with the actions that they describe.

II. It is only a very limited class of objects, however, that give forth an imitable sound, such as to suggest their articulate designation or name. The sun, the stars, the sky, the earth, the mountains, rocks, trees, and flowers, are distinguished by expressive silence rather than by audible accompaniments. This, however, only leads us a step farther into the powers and capacities of the human mind. Mere imitation, as when we mimic the cry of an animal, or chalk out the resemblance of a visible thing, or carve a fac-simile of any material object, is but an inferior effort of the human powers, although it is the utmost that some races are capable of. There is, over and above this faculty, a deeper and grander power, which is vaguely represented by such terms as creative art, artistic genius, the capacity of making harmonies, and many other phrases, which signify that there is such a thing as a common effect upon the intellectual and artistic faculties of man, by objects that are very different to the outward sense, and that the human mind has the power of recognising and of producing such harmonious concords of the unlike. Sound and motion are very different sensations, and yet it is well known that a set of sounds can harmonise with, and coincide with the effect of, a set of motions on the mind, as we see in march and dance music. So there are strains of music that suit each different kind of outward spectacle or scenery; the impressions of sight and sound, however different on their first entrance through their respective senses, may have a closely-agreeing or harmonious effect on the inward mind. So it is with all the senses; there is scarcely an impression made on any one of them that would not be suited or harmonised by some one impression on every other. The finer the organisation of the mind, the more keenly alive it is to such harmonies, and to their contradictions or to discords.

But man can not only feel these harmonies of things sensibly unlike, he can also create them; at least some men, who are gifted above their fellows, are able to do so. An artistic genius can make objects of a totally different outward form and character agree in producing a harmonious feeling. They may be things of the same sense, as the parts of a temple, or the objects of a picture; or they may be objects of different senses, as when music is composed for marching, dancing, or stage spectacle; or when words are used to celebrate actions, events, and natural grandeur. Present any visible object to an artist of genius, and he will, according to the turn of his genius, either find another visible thing to chime in with it into a beautiful whole, or utter a sound that is felt to accord with its impression on the mind. Suiting the sound to the sense, the word to the action, is well known to be one of the characteristics of the poetic faculty. The following stanza from Keats's 'Ode to the Nightingale,' exhibits this quality in a degree that has probably never been surpassed. The language descriptive of each object is felt almost to realise the object itself—

'Oh for a draught of vintage, that hath been
Cooled a long age in the deep-delved earth,
Tasting of Flora and the country green,
Dance, and Provençal song, and sunburnt mirth!
Oh for a beaker full of the warm south,
Full of the true, the blushful Hippocrene,
With beaded bubbles winking at the brim,
And purple-stained mouth;
That I might drink and leave the world unseen,
And with thee fade away into the forest dim.'

Now there is no difference between efforts of human genius such as this, and the invention of the first sounds used in connection with nameable objects; except that in the one articulations already formed are made use of to make new combinations, whereas, in the other, the articulations themselves are struck out for the first time. But this makes no difference in the nature of the effort itself. All our poetic geniuses could create original words at pleasure, if that were still necessary and allowable; and in fact they occasionally do so. Any one acquainted with the works of Burns will remember many such instances, which it is not necessary to quote here; and it will be easily seen that it was quite within the range of the poet's genius, and was even a tendency that it had to deal more largely in this kind of creation. If Burns had been produced among some of the weak-minded African tribes, he would have given them not merely a new poetry, but a new and expressive vocabulary; and would have been delighted with an opportunity so congenial to his faculties. The same remarks might be applied to Chaucer, Shakspeare, Keats, or any other poet whose genius lay strongly in power of diction.

What we assert, therefore, is, that the words not derived by direct imitation could have been formed by the genius of man through the deeper harmonies of things, and through the power of creating such harmonies. Moreover, it can be shown that every language does tend to harmonise with the things expressed by it, and did so perhaps still more at an early period of its growth. For it must also be taken into account, that when a name has a felt harmony, or mental coincidence with the thing, it is easily retained in the

memory, and easily diffused and caught by the various individuals of a society; in fact, every such name is a stroke of art, received and relished as such, as well as being a handle to an object, and useful in social intercourse. It would be impossible, by any power ever exercised over a multitude of men, to get them to adopt a set of insipid, inexpressive, or discordant vocables; and it would be equally impossible for human nature to produce them; nor can it be supposed that the Creator, granting Him to have been the direct author of speech, would have inspired such a species of sounds; it is more likely that He would have surpassed the genius of man, and made our languages more harmonious than we find them, which they could very well afford to be. The highest genius being but rare in all ages, this work must often have been done, or left undone, by an inferior order of minds.

It will not require many examples to show how deeply the principle of harmony enters into the vocables of speech. The 'ohoi' of sailors is a familiar instance of an articulate accompaniment to an action, and prepares us to expect that the current name of it and similar actions should contain the same sound, as we actually find in 'hoist,' 'heave,' 'haul,' 'hurl,' 'hurry,' 'high,' and in 'head,' if this be derived, as Horne Tooke suggests, from 'heaved.' The Scotch words 'sich' (sigh), and 'pech' (pant), show the same suiting of the word to the action. The words 'bound,' 'burst,' 'quick,' are obviously suggested by the character of the movements they apply to; 'strength' and 'stress' are the natural accompaniments of strong exertion, like the 'ohoi.' The word 'vast' is an expression of the speaking organs suited to the effect of a certain kind of spectacle on the organs of sight. 'Rough' and 'smooth' are the harmonies of peculiar sensations of touch; 'smack' is a word accompanying a peculiar flavour or relish. The word 'fresh' has a very strong coincidence of effect with the quality which it represents. 'Raw' is also a very expressive utterance for one of our sensations. The *r* sound, from its vibrating character, is the natural expression of any effect that causes a shivering or tremor of the flesh.

Many more examples of the same kind will suggest themselves to the reader. We have been able to give but a very limited illustration of such a wide ranging principle. It might be shown, in addition, how every emotion of the mind which objects can produce inspires an appropriate articulate harmony.

Mr Richardson, the author of the English Dictionary, has made an ingenious attempt to connect a few of the letters of the alphabet with extensive classes of allied meanings. Thus the labial sounds *b*, *m*, *v*, *f*, are the first uttered by children, and enter largely into the terms for the parental relations, and into the expression of life, mind, motion, &c. Thus we have *father*, *mother*, *filial*, *babe*, *boy*, *mind*, *motion*, *vital*. So he finds in the gutturals *q*, *k*, the notion of *eke*, or *increase*; in the *n*, *one*, *union*, *unite*, and the general idea of these. *R* is much connected with the expression of motion, and frequently gives the force of *before*; *s* has a wide application as a disjunctive syllable.

Having illustrated the origin of sounds by imitation and harmonious creation, we have next to trace the extension of these primary sounds by the force of the associating principles of the human intellect. The two fundamental laws of association are expressed by the terms contiguity and similarity, and both are of extensive operation in the growth of language.

III. When two things frequently accompany one another in our view, the one comes to be able to suggest the other. The name of a person may be formed by the creative faculty direct, or it may be the name of some adjunct inseparably connected or associated with him, as his territory or land, his office, or some of his deeds or attributes. In this last case there may be no essential harmony between the sound and the aspect of the person. Many objects are named by contiguity in this way: churches are named from saints, and parishes and villages from churches. Towns are named from wells, rivers, mountains, or other adjoining objects that have been able to originate a name for themselves. Objects discovered for the first time are called after their discoverers; effects are named from their causes; and causes from their effects. Rhetoricians have an express designation for this process of naming: it is said to be by *metonomy*, or by accompaniment.

IV. Equally extensive is the operation of *similarity*, or the extension of a name from one thing to another resembling it; which will in some cases tend to preserve the harmonious character of the original name. Thus the word *mouth* is applied to a great number of objects that are supposed to have the character of an opening: so *yawn* is extended to outward things, analogous to the original action. The whole range of what is called *metaphorical* terms, of which every language is full, are formed on the same principle.

V. Sometimes names are constructed out of several words or syllables taken from different objects, it being necessary in some cases to apply the names of several qualities to describe what is meant; as when we say, 'a coat of many colours,' 'black beetle,' 'moss rose,' 'steamboat.' The commonest case of construction is when a noun is qualified by an adjective, as 'green fields;' in the systematic naming of objects of natural history this combination is adopted. Another extensively used instance is the addition of qualifying terminations to words—*good-ness*, *god-like* or *godly*, *flam-ing*. The class of inflected words already alluded to exemplify the same principle: they result from the desire of the human mind to give a unity to each compound name, and for that purpose to fuse the syllables into one continued utterance. The creation of compound names is a work of human genius not unlike any other effort of constructive combination.

It has been repeatedly shown by writers on language, that individual and concrete names are the first invented, and that general and abstract names are subsequently formed out of them. There is a word invented for some one river before there is a general name for rivers; and the term for some particular white object would be likely to give the abstract terms *white*, and *whiteness*. We see this still exemplified in a few of the names of colours—as 'claret,' 'orange,' 'sky-blue.' The very abstract property of 'electricity' is named from amber, one of the first objects that the property was observed on. 'Geometry' is the measuring of land, to which particular case the science was originally applied.

With respect to the formation and growth of the several parts of speech, we have already seen that nouns, verbs, and pronominal words, are the original stems, and that all the others are derived from these. The pronominal words are the direct suggestions of the human faculties in the circumstances that they express. The nouns and verbs are the names of objects at large; and it would happen sometimes that the first name that an object suggests is a verb, and at other times it would be a noun. Verbs express action, and, as such, they are most in harmony with the articulate expression of man, which is itself an action. In fact, when a thing perfectly lifeless and motionless suggests a harmonising utterance, it must be in consequence of some secondary impression that it produces, relative to motion or force, such as the effect of a heavy mass, a confined cavity, or an open space. Perhaps in the greater number of cases a verb is the first form of the word, which is subsequently turned into a noun. Thus the word 'stamp' is evidently the harmonic of an action, and is primitively a verb; being afterwards used as a noun to express the thing left or produced by the action. It has been remarked that many of the roots of the Hebrew language are impersonal verbs, or verbs that express merely the action without the person or object, like our verbs, 'it rains,' 'it snows.' The imperative mood of the verb is generally the least inflected, and it may be supposed that some of the earliest expressions of action would be in the form of command. But with respect to the derivation of nouns from verbs,

Horne Tooke has pointed out a great number of cases in English where the past participles of verbs are converted into nouns; and many of those so derived are among the most important in the language. Thus *faint*, *gift*, *joint*, *cliff*, *drift*, *theft*, *want*, *draught*, *rent*, *melt*, *stern*, *heaven*, *dawn*, *yarn*, are all of this character; and it is easy to see that the objects they express are, or are supposed to be, the results of the actions designated by the verbs they proceed from. On the other hand, there are undoubtedly many cases where the noun has been the primitive form, and has given birth to a verb; a process we still see exemplified, as when we speak of *tabling*, *flooring*, *housing*, &c. The association of ideas is very obvious in these instances.

Of the formation of the other parts of speech, together with the inflections of verbs and nouns, we have already spoken. The laws of the human intellect can fully explain the tendency to make inflected or compound words; that is to say, the process is one of the well-known operations of the human mind. We frequently require to construct an object that will have many qualities, or serve many purposes: every machine, every plan of complicated operations, every discourse, is such a construction. When we wish to express an idea that has many particulars, we seize a number of separate names, and join them together in the best way we can, or according to our taste, so as at once to include what we mean to affirm, and exclude what is foreign to the purpose. We may at the same time desire brevity of utterance, and in that case we fuse and contract the separate words as much as possible; we may wish for melody or fine cadence, and as our ability serves us, we impress this character on the combination. Different peoples have had different fancies and very unequal capacities in respect to this constructive operation. Some, like the Chinese, have not been able to combine elementary words into perfect compounds that sound as flowingly as a single syllable; while the Greeks and their ancestors could do so to the utmost perfection. Our own language is about midway between the Chinese and the Sanscrit, or between the system of the eternal separation of roots, and the system of harmonious aggregation into inflected words carrying multiple meanings.

Inflected languages, if the inflections are subject to the laws of harmonious utterance (which in many cases they are not), serve the purposes of oratory and poetry in a very high degree. Uninflected languages may have the superiority as the medium of prosaic communication and scientific analysis, if they are well formed in certain other respects.

Sentences or successions of words naturally follow the order of the things to be expressed: if they relate to events, it will be in the order of time; if actions, the order of cause and effect. But the natural order may be reversed from the feelings of the speaker, or from a wish to make a certain musical effect on the language, in addition to the communication of the thought.

The progress and development of a language are influenced by many causes. Besides enlarging the basis by inventing new words, and extending the applications of the old, there is a constant tendency to abbreviation which goes on modifying the original sounds. A people's language is expanded by their discoveries in the material or mental world, and by their advance in science, arts, and civilisation in general. It is also made an object of express cultivation for its own sake in all improving nations, and is controlled by artistic genius, and by artificial laws of pronunciation, grammar, rhetoric, and criticism. The love of novelty will cause innovations, and produce fashions in speech as in other matters; but being a thing impressed upon the minds of men at their most susceptible season, and being intensely riveted by daily use, it comes to be among the most permanent of human acquisitions.

Language is also exposed to many changes and modifications by the intercourse of different nations. This cause has sometimes gone so far as to suppress one language almost entirely, and to substitute a foreign tongue in its stead. But the amount of this influence may be more or less, and it has been exemplified in many different degrees in the history of the world. If one nation merely trades with another at some distance, it will import, with the foreign commodities, the names that are given them by the other nation; if the opportunity of intercourse leads to the exchange of customs, ideas, and institutions in general, the names of these may also be acquired, just as the French use many of the English phrases for the steam-engine. Colonisation in a country already peopled is a further step, and has a still greater influence; but the peculiar effect that takes place will depend on the characters of the two peoples. If the one is more intellectual and more advanced, more resolute and more wedded to its practices than the other, the language of the stronger will be likely to be imposed more or less on the weaker. But if the colonists are not accompanied by women, and are obliged to adopt wives from the inhabitants that they settle among, the next generation will have more of the language of their mothers than of their fathers, and a modified form of the aboriginal speech will be maintained. The same fact holds true of invasions and conquests like the Saxon and Norman settlements in England. On the other hand, in the German conquests of the Roman Empire in the fifth century, which were made by nations migrating in mass, the tongue of the invaders was more likely to be sustained. It would then depend upon the relative numbers of conquerors and conquered, and their relative energy, general superiority, and self-will, which of the languages should give way, and to what extent. In general, in every invasion, the portions of the conquered people's language which are most liable to alteration are the names of ranks, offices, forms of administration, and everything connected with the general government of the country. The spread of religion among a people affects their language along with their whole manner of thinking and feeling. The same obtains in a minor degree in any new sciences, arts, knowledge, doctrines, or institutions that may be communicated to a nation in anyway whatever. If conquest or intercourse change the character of a people, it will by that fact alone change their language. Any other circumstance modifying national character, such as emigration to new settlements, will have the same effect.

Among the circumstances which act in modifying the use of speech, none is more important than the art of writing. It would be interesting to imagine the origin and progress of written language, in the way we have endeavoured to explain the career of spoken language. We might, in so doing, show the action of the same laws of human nature in a different class of circumstances. Every people of superior character would, in addition to their spoken signs, create an independent class of written signs, which last would, in fact, in some respects be the easier effort of the two. Mere imitation, or picture-drawing, would suffice in this case, for there is no object but what has a visible form, or may be easily associated with such; and after the mechanical art of drawing has been once acquired, the means of indicating the objects of communication and thought would be unlimited. The weak point of picture-writing is seen in attempting the expression of action and chains of events; but this difficulty has not been found insuperable. Examples of successful picture-writing have been furnished by many nations—such as the Egyptians, Mexicans, and Chinese. The abbreviations that would necessarily be made for the sake of saving time would very much diminish the exactness of resemblance; but so long as the meaning was understood, this would be of little moment to the people themselves. This, however, renders it difficult now to trace each mark or symbol to its original imitative form; but not so much so as to obliterate altogether the evidence of the fact.

The invention of an alphabet is a totally distinct step from the formation of a picture language. It is a vast stride in advance, arising out of the simultaneous

use of both spoken and pictured signs for the same objects. To illustrate this process we shall imagine an instance of a familiar kind. Suppose the sound *bee* were adopted as the harmonic articulation, or spoken name of the insect so called with us; and suppose also that, quite independent of the spoken name, a pictured imitation had been formed of the same object, and abbreviated or simplified as much as was consistent with characteristic distinctness. The object would thus have two marks, one to the eye and one to the ear; and by the association of ideas, the two marks would be connected in peoples' minds, so that on seeing the picture they would be reminded of the sound, and on hearing the sound they would be reminded of the picture. Suppose, next, that some other object had acquired a name where the *b* sound occurred, without having yet acquired a pictorial representation. In such a case it would be very natural, instead of making a new drawing, to employ the one already corresponding to the sound in a well-known instance: this would not picture the object to the eye, but it would suggest its name to the ear, and be at least as effectual as the mention of the name in speech. If the word contained two characteristic sounds, as *bed*, and if the character for a *bee* were joined with another character derived in the same way for the *d* sound, an alphabetic representation of *bed* would be the result. In the first stages of the alphabet, the vowels and consonants were not perfectly distinguished; each letter was a simple syllable, having the force of a vowel and consonant joined. This explanation of the origin of the alphabet is completely confirmed by the structure of the Hebrew letters, which are the originals of all the European alphabets.

The art of writing tends to fix a language, and erect for it a standard of grammar and spelling, by placing it under the control of the learned classes of a nation.

THE LANGUAGES OF THE GLOBE.

After expounding the essential *structure* of language, and the principles of the human mind that determine its origin and *growth*, the next object should be to enumerate and classify the actual languages of the human race, to specify their distinctive peculiarities, and to illustrate by means of them the general principles previously laid down. But, not to speak of the limits of this treatise, the complete examination of the languages of the globe is at present very far from being complete, and the analysis of such as are known is spread over many hundreds or thousands of volumes. We must be content, therefore, with stating the usual classification that has been adopted, with a few remarks on a limited number of individual tongues. The grand divisions correspond with the divisions of races and nations described under ETHNOLOGY.

Indo-European Languages.

The names *Indo-Germanic* and *Indo-European* are given to a class of languages that prevail from the East Indies, through the west of Asia, and across the whole of Europe to the Atlantic. They are also called *Iranian*, from *Iran*, the ancient name of Persia, and the name of the lesser of the two table-lands of Asia, nearly coinciding with the empire of the ancient Medes and Persians. This Persian table-land is supposed to have been the original seat of the Indian and European nations, from which they migrated and conquered, some eastward upon Hindoostan, others westward upon Europe, giving rise to the chief of the modern European nations.

These languages and nations have been divided into High and Low, from the supposed primitive geographical position of the different peoples. The high languages are believed to have sprung more immediately from the high land of Persia, and the low from the adjoining lower country of Media. The Classical, Germanic, and Celtic stocks of the tribe, are each divided into a high and low division; and there is found to be a closer analogy between the high and the low divisions respectively of each stock, than between a high division of one and a low division of another. We shall first state the individuals of the tribe in geographical order, and next indicate the high and low divisions:—

I. The *Sanscrit*, containing all the dialects of Hindoostan derived from the Sanscrit.

II. The *Persian*, ancient, middle, and modern. The ancient Persian, of which books still remain, is called the Zend, and is the language chiefly used in making comparisons with the ancient Sanscrit, Greek, Latin, and other tongues of the Indo-Germanic family. It includes the allied tongues of Curdistan, Affghanistan, Beloochistan, and Bocharia.

The Armenian and Georgian stocks have a geographical position adjoining the Persian, but their extent and importance are comparatively small. 'The Ossetic, a language spoken by an insulated tribe of Mount Caucasus, and a supposed remnant of the ancient Median, is Indo-European.'

III. The *Classical*, embracing the Greek and Latin, and the tongues allied to these in ancient and modern times. The modern French, Italian, Spanish, and Portuguese, are derived from the Latin.

IV. The *Slavonic*, including the Russian, Polish, and Bohemian languages, and those of a great part of the countries in Europe subject to the Turkish empire—the Servians, Croatians, Transylvanians, &c.

V. The *Lithuanic* stock, including the Livonian (or Lettish) of Livonia and Courland, the old Prussian, and the Lithuanian of Lithuania.

VI. The *Gothic* or Germanic languages, including the Scandinavian branch, or the Norwegian, Swedish, Danish, Icelandic, and Feroic; and the Teutonic branch or the High German (whose ancient form is called the Mæso-Gothic), and the Low German tongues—namely, Dutch, Anglo-Saxon, and English.

VII. The *Celtic*, which has six different branches—the Cymric or Welsh, the Cornish (extinct), the Armorican, or dialect of Brittany in France, the Irish, Scotch Gaelic, and the Manx of the Isle of Man.

It is understood that in a historic point of view the so-called low languages are the oldest of the two; an opinion which contradicts many beliefs formerly prevailing, such as that Greek is a more ancient formation than Latin.

The high languages of the family are considered to be High Persian or Parsi, the Greek branch of the classic stock, the High German, and the first three Celtic tongues mentioned above—Welsh, Cornish, and Breton. The low languages are the Sanscrit, the Zend or Low Persian, Latin, Slavonian, Lithuanian, Low German, and Low Celtic or Irish, Scotch, and Manx. This classification is found to be supported by the closer analogy that exists throughout each class, than if no such distinction was made.

Other European languages not of this family are the Albanian, the Basque or Biscayan, the Turkish, the Maltese, the Calmuck of the Crimea, the Hungarian or Magyaric, the Esthonian, the Finnlandic and Lapponic. It has been attempted to include all or most of these in another great family or tribe along with the Tartars of Central Asia.

The most interesting point in reference to the Indo-European languages, is the fact of their family resemblance. Considering the remoteness of the various peoples from one another, the very little intimacy that there has been among them, and the mutual unintelligibility of their spoken tongues, it is surprising to learn that there is at bottom a very close identity of words and forms between the most distant members of the family. We shall here present a short table of words running through all the languages, choosing such as are the names of the most prominent and indispensable objects of human speech. The following list is selected from Winning's 'Manual of Comparative Philology:'—

Father.—Sanscrit, pitar; Zend, paitar; Persian, pader; Greek and Latin, pater; Slavonic, bat; Gothic, fadrein; Low German, fader; Old High German, vatar; Erse, athair.

Mother.—Scrt. matar; Z. mater; Pers. mader; Greek, mater; Latin, mater; Lithuanian, moter; Lettish, mate; Old Prussian, muti; Ga m. muoter, mutter, moder; Erse, mathair.

Daughter.—Scr. duhitar; Z. dughdhar; Pers. dokhter; Greek, thugater; Slav. dochter; Lith. dukter; O. Pr. duckti; Goth. dauhtar; Germ. tochter; Erse, dear.

Brother.—Scr. b'ratar; Z. bratar; Pers. brader; Lat. frater; Greek, fratra (a fraternity); Slav. brat'; O. Pr. brati; Goth. brothar; Scandinavian, brodur; O. High German, pruodar; German, bruder; Erse, brathair; Welsh, brawd.

God.—Scr. devas; Z. davas; Pers. and Russ. diw (the evil spirit); Lith. diewas; Lett. deews; O. Pr. deiws; Lat. deus; Greek, theos; Erse, dia; Welsh, duw; Scandinavian, ty-r.

Eye.—Scr. aks'i; Z. as'i; Lith. akis; O. Pr. ackis; Lett. ass; Slav. oko; Lat. oculus; Goth. augo; Germ. oge, auge; Dan. oje.

Tooth.—Scr. dantas; Pers. dendan; Lith. dantis; Gr. o-dontos (teeth); Lat. dens; Goth. thuntus; Dan. tand; O. Engl. tain; Erse, dend; Welsh, dant.

Foot.—Scr. padas; Z. pad'as; P. pa; Gr. Lat. podes, pedes (feet); Lith. padas; Lett. pehda; Goth. fotus; Germ. fuss.

Sun.—Scr. hailis; Gr. helios; Welsh, haul, heol; Lat. sol; Slav. solnse; Lith. saule; Lett. saule; Goth. sauil; Scand. soel; Erse, saule.

Water.—Scr. uda; Lat. udus, unda; Gr. hudor; Slav. voda; Lith. vandu; Lett. udens; O. Pr. unds; Scand. udr; Goth. vato; O. H. Germ. wazar; Germ. wasser; Erse, dour; W. dwr.

Light.—Scr. aloka; Gr. lukē; Lat. lux, lucis; Slav. luc'; Lett. lukotees (to look around); Goth. liuhath; Germ. licht; W. lhwej; Erse, leos.

Door.—Scr. dwara; P. dar; Slav. dwer; Lith. durrys; Lett. durris; Goth. daura; Germ. thur; Gr. thura; Erse, dorus; W. dor.

Ox, Cow.—Scr. go, gaus; Z. gaos; P. gau; Sabine, gaius; Lett. gows; Erse, geo; Scand. ku; O. H. Germ. chuo; Germ. kuh; Gr. bous; Lat. bos; Slav. bulk; W. buw.

Worm.—Scr. kirmis; P. kirm; Lith. kirmele; Lett. zehrms; Lat. vermis; Goth. vaurms; Scand. orms; Germ. wurm.

Thin.—Scr. tanus; P. tenuk; Gr. tanus; Lat. tenuis; Slav. tanok, tanan; Scand. thunnr, tunn; Germ. dunn; W. denau.

New.—Scr. navah; P. nu; Lat. novus; Gr. neos; Slav. novii; Lith. naujas; O. Pr. nauns; Goth. nivis; Germ. neu; Erse, nuadh; W. newydh.

Red.—Scr. rud'ira; Lat. ruber; Slav. rdjti (to redden); Lith. ruddas; Scand. rod; Engl. ruddy, rud; Erse, ruadh; Gr. eruthros; O. H. Germ. rot; Germ. roth.

First (feminine singular).—Scr. prat'ama; Z. frathema and paoirya; Gr. prota; Lat. prima; Goth. fruma; Lith. pirma; O. Pr. pirmoi; Slav. pervaja.

To know.—Scr. g'na, ganami, gnotas (known); Gr. ginosko; Lat. gnosko. gnarus; Slav. znati; Lith. zinoti; Lett. sinnat; Goth. kanu, *I know;* O. H. Germ. chnata, *I knew;* Germ. kennen; Engl. to ken, *to know;* W. gwn, *I know.*

Stand.—Scr. st'a; Z. histami; Gr. histēmi; Pers. astaden; Slav. stati; Lith. stoweti; O. Pr. staninti (standing), po-stat; Goth. standan; O. H. Germ. stantan; Erse, stadam; W. eistedh. *to sit.*

Bear.—Scr. b'ar; Z. baraiti; P. berden; Goth. bairan; Saxon, bearan; O. H. G. peran; Erse, bheirim, bearadh; Gr. phero; Lat. fero.

Eat.—Scr. ad; Gr. edo; Lat. edo; Slav. jadmi; Lith. edmi; Lett. ehmu, ehde; O. Pr. idis, *food;* Goth. itan; O. H. G. izan; Germ. essen; Erse, itheadh; W. yeu.

Be.—Scr. b'u; Z. bu; P. bu-den, *to be;* Slav. bu-ti; Lith. buti; Lett. but; O. Pr. bout; Low Germ. beon, *to be;* O. H. Germ. pim, *I am;* Erse, bhith, *to be,* bu mi, *I was;* W. bod, *to be;* Greek, fuo; Lat. fui.

Mind.—Scr. manyati, *he thinks,* manas, *mind;* Z. man, *to think,* mans, *mind;* Gr. mnaomi, *I remember, think;* Lat. moneo, memini, mens, *mind;* Slav. mjeniti, *to think,* po-mjanu, *I remember;* Lith. meneti; Lett. pee-minne, *I admonish;* O. Pr. po-minisma, *thought;* Goth. munan; O. H. Germ. manon; Germ. meinen; Engl. *to mean;* W. menw, *mind.*

The amount of coincidence which may be thus observed in such primary and universal words through so many languages, is rendered still more striking and instructive by the discovery, that the differences in the same word observed between one language and another are subjected to regular laws. It was discovered by Grimm, that a regular interchange of consonants takes place between the words of the German languages, so that when we know how a word is spelt or pronounced in one, we can almost predict with certainty how it will be pronounced in another; so that, in fact, the different languages are in a great measure composed of the same words articulated in different ways. We have seen that the Sanscrit, Greek, and Latin, give as the word for *father, pitar, pater,* where the consonants are *p, t, r;* while in the Low German dialects or the Gothic, it is *fadreis;* the mute labial *p* being turned into the aspirate labial *f*, besides the change from the mute to the vocal dental, or from *t* to *d*. The Old High German has a still farther change of the same labial to the vocal aspirate *v;* in it the word is *vatar.* So we observe *tres, threis, dri;* or dental mute, aspirate, vocal, in the Latin (as well as the Greek and Sanscrit), Low German, Old High German respectively. Again, when the Latin has a vocal for the characteristic letter of a word, as *d*, the Low German (including English) has a mute, thus *decem, ten.* The change from mute to aspirate is exemplified in the gutturals, in *cor, heart.* In the same way other changes might be exemplified of an equally uniform character. The discovery of such principles stamps a certainty upon the etymological tracing of words which could not otherwise be attained. It is not enough that one word in one language should sound very like a word in another language; they must differ according to the laws established between the two languages, and in no other way.

There are thus for each member of the Indo-European family certain general principles of the formation of words, which, though not without accidental deviations and exceptions, govern its mode of pronouncing such of the words as are common to the whole family. The determination of these laws, therefore, enables the vocabulary of one to be immediately applied to interpret the vocabulary of another. We shall cite a few more examples of pervading peculiarities attaching to individual tongues, in touching briefly upon the leading members of the family in succession.

The *Sanscrit*, which can be most immediately compared with the Greek, wants entirely the two vowels *e* and *o*, having only the three *a, i, u*, and certain vibratory vowel modifications of *r*. These three are the most strongly marked of the vowel utterances, and are therefore the primary vowels; the *e* and *o* being evolved from them at a subsequent stage. The Sanscrit has usually *a* where the Greek or Latin has *a, e,* or *o*, which gives an immense predominance to the *ah* sound in the Indian languages. The Sanscrit has also sometimes a guttural, which is transmuted in the classic languages, but remains in the Gothic, as *laghu, lux, leicht, light.* A somewhat unexpected change is occasionally made from *d* to *l*—as *dipa, lamp.*

The *Zend* language is remarkable for wanting the *l*, as the Chinese wants the *r*, and hence all its forms must be subject to this omission; but in modern Persian the letter is found. The *s* in Sanscrit is apt to be replaced by *h* in Zend—as *sá, há, they; sapta, hapta, seven; sva, hva, his.* This corresponds to an interchange that is frequent between Latin and Greek—as *sus, hus,* a *sow;* and also between Gaelic and Welsh; and it is worth remembering that Latin, Sanscrit, and Gaelic are of the low division, while Zend, Greek, and Welsh are of the high division of languages. The Zend also differs from the Sanscrit in possessing the vowels *e* and *o*.

The comparison of the *German* languages among

themselves was the first occasion of bringing out these uniformities of interchange, and has completely established the existence of two distinct German stocks, having nearly the same vocabulary differently articulated; one of which, including the low dialects, is the older and softer of the two. Although the two stocks branch out into subordinate divisions, the characteristic difference of pronunciation follows them throughout. Thus where we say *day*, the High German says *tac*, *tag*; where we say *sleep*, they say *slafen*, *schlafen*. The Scandinavian tongues rank with Dutch, Flemish, Frisian, Anglo-Saxon, and our own language, among the low German class. Each of these tongues has its distinctive and assignable peculiarities of vocables and grammar, showing an independent growth subsequent to their separation from the parent stem, and doubtless determined by the characters and fortunes of the separate peoples. The only point touching on their connections or differences to which we can here allude, is that relating to Anglo-Saxon and English. It is customary to assert that Anglo-Saxon was the only Gothic language in this country prior to the Norman invasion; and that shortly after this event, it became transmuted into English, a language differing from it in some of the most durable peculiarities of grammatical structure. But when we consider the difficulty there would be in inducing a whole people accustomed to say, *to bear*, *to die*, &c. as the infinitive forms of the verb, to change to the form *bearan*, where the preposition is at the end, there being no assignable motive for making such a change, we may safely assert that no sufficient proof has hitherto been adduced that the opposite change took place within a century, and that a large class of other changes of a kind equally difficult and uncalled for was made within the same period. Hitherto, the growth of English out of Anglo-Saxon has been tacitly assumed as a thing hardly requiring any evidence farther than the affinity of the languages, and the known disappearance of one of them; the steps adequate to effect so stupendous a revolution in the habits of articulation over a large empire have never been suggested by any one.

In the English language there are computed to be about 53,000 words, of which 3820 are primitives; of these primitives, 2513 are common to English and the German tongues; and 1250 common to English and the classic tongues. This calculation will serve to show how far the knowledge of English avails us in acquiring Greek and Latin, as well as the modern European languages.

The *Celtic* tongues have only of late been shown to belong to the class of Indo-European languages; but the proof of their being so related is now considered complete. They suffer the same division into high and low as the rest of the family. The high are the Welsh, Cornish, and Armorican; the low are the Erse division, or the Gaelic, Irish, and Manx. The high languages are also the youngest, and the peoples they belong to are believed to have been the latest to occupy their seats in the west of Europe. The periods of the westerly migrations of the Celtic nations have not been clearly made out; one set of movements are traced to the sixth century before Christ, and others preceded this epoch by an unknown interval.

One striking characteristic of the Celtic tongues is their adhering to the same letters as the Sanscrit, Greek, and Latin, in the words that are regularly changed in the Gothic tongues. Thus in the word *tooth*, which is spelt with a *d* (danta) in Sanscrit, changed into *t* in all the German languages, the Celtic adheres to the Sanscrit; in Welsh it is *dant*, in Irish *dead*. So *pada*, Sanscrit; *ped*, Welsh. This peculiarity has enabled Dr Meyer to specify certain English words that have been obtained direct from the Celts, and not from the common ancestry of the Indo-European tongues. Thus *take*, *tread*, *taper*, *time*, are examples of words so derived; also *bake*, *bath*, *basket*, *bride*.

Another Celtic peculiarity is the regular alteration of certain consonants when preceded by vowels, evidently to suit a certain habit of articulation. Thus the Welsh word *tre* (a house), when preceded by the prefix *a*, becomes *a-thre*, the mute being rendered into an aspirate. The Welsh *marw* (dead) becomes *di-varw* (immortal), the labial *w* being changed into the vocal aspirate. This is the reverse of a Cockney peculiarity, which makes *divide*, *di-wide*.

Dr Meyer concludes, from a careful examination of the Celtic tongues, that while they are of the Sanscrit class, they have decided affinities with the Egyptian, the Semitic, and the Finnish languages, and may be regarded as more primitive or ancient than any of the other Indo-European tongues; that is to say, they broke off from the parent stem, and took a fixed set before any of the others had reached their characteristic development.

Tartar, Tatar, or Turanian Languages.

These languages belong to the vast group of nations that have received the name of Tartars, and are commonly understood to lead a pastoral and migratory life. They have never attained a high degree of civilisation, and what they have seems only in part their own. Their celebrity in the world has been owing to the conquests that they have achieved over civilised nations by the brute force of numbers. They cover the immense plains of Central and Northern Asia, and extend into the Polar regions of Europe. The name *Turanian* has reference to the high table-land of Asia, called *Turan*, as the lower table-land is called *Iran*.

M. Abel Remusat, in his work on the Tartar languages, divides them into four great tribes radically distinct from each other. Beginning at the east, where they are in contact with the Chinese, the first division is the *Tongous*. Their territory is divided into two halfs by the line that fixes the frontiers of the Russian and Chinese empires. From them have proceeded, among others, the Mantchou Tartars, at present the ruling dynasty of China. The second division is the *Mongols*, celebrated for their conquests under Ghenghiz Khan. The greater number of their tribes are now under the power of China. The third division, more numerous than either of the other two, is the *Turks*, whose origin is more westerly: they also are known from their vast conquering career, and from their still possessing one of the largest empires of Europe. The fourth division is the *Tibetans*, or Tartars of Thibet, the more exclusive occupants of the table-land of Central Asia, and having, from their position, close connections with China, Persia, India, and Tartary. The Mongols have for a long time governed their country, but at present the Chinese exercise over it a preponderating influence.

Respecting the Tartar languages, M. Remusat sums up the conclusions of his researches as follows:—The words that refer to objects of the first necessity and prominence are radically different in all the four, and are not analogous to any other known language. The resemblances that may be traced throughout them all refer to the objects of the arts, to titles, dignities, and religious or philosophical ideas: they prove that there have been some common influences of commerce, war, politics, and religion; and they are of the same character as the words introduced from foreign languages. The grammatical forms are few in number and very little complicated; the relations of names are marked by affixes or annexed words, without elision or fusion; the verbs are in general without conjugations; the tenses most used are impersonal; the construction is rigorously inverse; their literature, like all their philosophical and religious ideas, is entirely borrowed.

Another class of nations, named the *Ugrian* tribes, are considered as having affinity with these four Tartar races. Their original country reached through northern Europe, from the Danish islands to the North Cape of Asia; but they have been driven from the greater part of this region, and the only portion of them now extant in the heart of Europe is the Magyars of Hungary. The Finns, Laplanders, &c. are of this race. The relations above alluded to, of some of the Celtic peculiari-

ties to the Finnish languages, may be connected with the fact, that the Celts, in marching through the European continent, most probably encountered Finnish or some of the Ugrian tribes. The Celts being the first of the Indo-European peoples to occupy Europe, they must have borne the chief brunt of the battle with its previous occupants of the Turanian family. It has even been supposed that the Celts must themselves be considered as a mixture of an Indo-European tribe with one of Finnish or Lappish descent.

The Old Iberian language of Spain, of which the Basque is supposed to be a relic, is likewise classed among the primitive languages of Europe, prior to the advent of any Indo-European people.

The aborigines of India, who were subdued from the west by an Iranian tribe, speaking the Sanscrit language, are also reckoned of Turanian or Tartar descent. In the south of India they are still traced as a separate race, having a speech allied to the Tartar.

Attempts have been made to include other scattered tribes in the same great family; but the evidence for such alliances is at best but precarious. For example, the languages of Australia have been supposed to have some affinity with the Tamulian or aboriginal Tartar of the south of India.

Semitic Languages.

The prominent members of this tribe are the *Hebrew* and the *Arabic*, to which are added the *Aramaic*, or the languages of the ancient nations of Aram, Syria, Mesopotamia, and Babylonia, which were Syriac in the west and Chaldaic in the east; and also the Ethiopic, or the ancient and now sacred language of Abyssinia.

The Hebrew language is remarkable on a great many accounts. Its alphabet has been adopted by European nations, whose own languages are of a totally different tribe. It is of a structure considerably different from the Indo-European tongues, and supposed to be in some respects more primitive than theirs. The roots are for the most part verbs; that is to say, action is the primitive idea of each—which circumstance, however, we have seen to be the most natural, or the most accordant with the operation of the human faculties in the invention of articulate sounds. What is more remarkable about these roots, is their being dissyllabic or trisyllabic; that is, they are made up of three consonants, or consonantial syllables. The inflections are formed by internal changes in the words, more than by affixes and prefixes, as in the Iranian tongues, being similar to the strong conjugation in English—as *come, came, brake, broke*. There is no verb of general affirmation like our verb *is, are, were*.

The Hebrew language has been found capable of the highest order of poetry, and the Arabic has served the purposes of scientific expression, as well as literary uses in general. The ancient Phœnicians and Carthaginians spoke a Hebrew dialect.

African Languages.

These languages are still a subject of active research, and are far from being completely known. The fullest account of them appears to be what was given by Dr Latham to the British Association in 1847. Dr Latham divides them as follows:—

I. The Coptic class, containing the extinct dialects of Egypt.

II. The Berber class, embracing the *non*-Arabic languages of Northern Africa.

III. The Hottentot class.

IV. The Caffre class, extending from the limits of the Hottentot country as far northward as Loango and the river Juba, west and east.

V. An unnamed class falling into eleven subordinate groups:—

1. The Nubian group.
2. The Galla group.
3. The Borgho group.
4. The Begharmi group.
5. The Boru group.
6. The Mandara group.
7. The Howsa group.
8. The Mandingo group.
9. The Woloff group.
10. The Fulah group.
11. The Ibo-Ashantee group.

In addition to these are six other languages still unplaced. Dr Latham gives copious lists from the vocabularies of these various tongues, and discovers a great many cases of coincidence, such as to show the probability of the common descent of many of the remotely-situated tribes.

The ancient Egyptian language is perhaps the most celebrated and interesting of the African tongues. The study of its structure has led some to the belief that it has a midway position between the Indo-European and Semitic languages, and forms a connecting link between the two, as if it were a branch from a very old and primitive language from which both these great tribes alike sprung. The affinities and resemblances of the Celtic, the most ancient of the Iranian tongues, to the Egyptian, have been brought forward to support this view. It is one of the points respecting ancient Egypt especially urged in the recent erudite work of the Chevalier Bunsen.

The Malay Languages

form a class by themselves. They are spoken in Malacca, and the islands of the East Indian Archipelago (Java, Sumatra, &c.), and are also found, in close proximity with Africa, on the island of Madagascar. The dialects of the Polynesian Islands in the Pacific Ocean have been lately identified with the same class; thereby furnishing an important clue to the peopling of these remote localities. A difficulty still remains with the Papua language, spoken by the black and woolly-haired tribes in Australia and New Guinea, who are also the aborigines of the island of Borneo, and who occupy a few small Polynesian islands.

Chinese Language.

Like other portions of their civilisation, the language of the Chinese is peculiar, and contrasts with all other nations. It has been called monosyllabic, not only to distinguish it from the trisyllabic roots of the Semitic tongues, but to show that it has not adopted the expedient of adding syllables to one another in the way of inflections, as in the Iranian languages. For denoting the connections, and relations, and circumstances expressed by inflections, it uses separate words; and in showing the exact force of these words, dependence is placed on their arrangement in the first place; and in the second place, on the tone and accent of their pronunciation. The words are all names of objects, and they require to stand for nouns, verbs, adjectives, or prepositions, as the case may be. There are said to be no more than a few hundreds of these syllable words to compose the language; these being multiplied three or four times by variety of accent.

The writing of the Chinese is wholly independent of their speech, and is the only language universally understood over the whole empire. It is exactly in the predicament of our numerals 1, 2, 3, &c., which are of no particular language, and have a different sound in each; being universal to the eye, but not to the ear. The process of comparing picture-marks with sounds, which gave rise to the alphabet, has never been performed by the Chinese.

American Languages.

These languages received the name 'Polysynthetic,' from their excessive tendency to agglutinate syllables into long words; and this being supposed to be a kind of inflection like the Greek or Sanscrit forms, it was thought to indicate a high order of speech. But in fact nothing could be farther from regular inflections than such a process; it being nothing but an indiscriminate huddling of syllables; sometimes two or three put on for the same meaning, evidently caused by a habit or instinct of flowing articulation. No satisfactory attempt has yet been made to classify these languages, or to trace an affinity between them and the other great families above-mentioned. Alleged affinities are denied by those most intimately acquainted with the languages themselves.

CONSTITUTION OF SOCIETY—GOVERNMENT.

In the two preceding numbers we have drawn attention to the physical and mental constitution of man, and to the great instrument of thought by which he is enabled to give scope to the development of that constitution either in an individual or in a collective capacity. We devote the present sheet to a review of man's social nature—to that condition in which he lays aside the sole consideration of self, and enters upon a scheme of union and co-relation, whereby he finds his own happiness in the happiness of those with whom he is associated; and advances in civilisation and refinement not as an individual only, but as a nation or race, and that in proportion to the perfection of the social system he has been able to eliminate.

CONSTITUTION OF SOCIETY.

Man is a gregarious animal; that is, he loves to herd together with his fellows—to live in society. There are, indeed, instances of men fleeing society, and spending existence in solitude, but these unhappily-disposed individuals form only an exception to a general rule. 'Man,' observes Dr Thomas Brown in his Philosophy of the Human Mind, 'is born in society, and dependent on it, in some of its most delightful forms, for the preservation of his infant being, which, without the protection of those who love him the more for the very helplessness that is consigned to their protection, would seem thrown into the world only to suffer in it for a few hours, and ceasing to suffer, to cease also to exist. If man be dependent on society for the preservation of his early existence, he is not less dependent on it for the comfort and happiness of his existence in other years. It is to be the source of all the love which he feels, of all the love which he excites, and therefore of almost all the desires and enjoyments which he is capable of feeling. There is not one of his actions which may not, directly or indirectly, have some relation to those among whom he lives; and I may say even that there is scarcely a moment of his existence in which the social affection, in one or other of its forms, has not an influence on some feeling or resolution, some delightful remembrance of the past, some project of future benevolence or resentment.

Of a society to which man thus owes all his strength, as well as all his happiness, it is not wonderful that nature should have formed him desirous; and it is in harmony with that gracious provision which we see realised so effectually in our other emotions, that she has formed him to love the society which profits him, without thinking of the profits which it affords; that is to say, without regard to this benefit as the primary source of a love that would not have arisen but from the prospect of the selfish gain. We exist in society, and have formed in it innumerable affections, long before we have learned to sum and calculate the consequences of every separate look and word of kindness, or have measured the general advantage which this spontaneous and ready kindness yields, with the state of misery in which we should have existed if there had been no society to receive and make us happy. These affections, so quick to awake in the very moment almost of our waking being, are ever spreading in the progress of life; because there is no moment to the heart in which the principle of social union is cold or powerless. The infant does not cling to his nurse more readily than the boy hastens to meet his playmates, and man to communicate his thoughts to man.

What is every language but a proof of the agency of that feeling which makes it delightful to us to speak and to listen, because it is delightful to us to make our thoughts pass into other hearts, or to share the thoughts of those other hearts? We use speech, indeed, in its vulgar offices to express to each other the want of bodily accommodations, which can be mutually supplied by those who know each other's necessities; and as a medium by which these wants can instantly be made known, it is, in these vulgar offices, unquestionably an instrument of the highest convenience, even though it were incapable of being adapted to any other purpose. But how small a part of that language, which is so eloquent an interpreter of every thought and feeling, is employed for this humble end! If we were to reflect on all those gracious communications, and questions, and answers, and replies that, in a little society of friends, form for a whole day a happiness which nothing else could give, the few words significant of mere bodily wants would perhaps scarcely be remembered in our retrospect of an eloquence that was expressive of wants of a very different kind; of that social impulse which, when there are others around who can partake its feelings, makes it almost impossible for the heart, whether sad or sprightly, to be sad or sprightly alone; and to which no event is little, the communication of which can be the expression of regard. In that infinite variety of languages which are spoken by the nations dispersed on the surface of the earth, there is one voice which animates the whole—a voice which, in every country and every time, and in all the changes of barbarism and civilisation, still utters a truth, the first to which the heart has assented, and the last which it can ever lose; the voice of our social nature bringing its irresistible testimony to the force of that universal sympathy which has found man everywhere, and preserves him everywhere, in the community of mankind.'

Family Relationship—Marriage.

Human society is composed of families. A family consists of husband, wife, children. This is not an accidental or arbitrary arrangement. The family compact originates in the necessities of our nature; has existed since the creation; and, by the good providence of God, will continue till the end of time. Accordingly, all attempts to encroach on the obligations, as well as the privileges of the family relationship, have proved less or more nugatory, and must ever inevitably do so.

What is the fundamental object of the family compact is abundantly evident: a due provision for the affections, and for the nurture and education of children. This latter is insured by the matrimonial engagement—a solemn covenant between a man and a woman to attach themselves to each other through all the contingencies of life till the death of either dissolve the union. In every nation removed from barbarism, marriage is a recognised ordinance, guarded by law and custom. In some eastern countries, *polygamy*, or the marriage of a man with many wives, has long been tolerated; but that loose instances of this kind are a violation of a just and reasonable principle, is testified by the fact, that polygamy is not favourable to the rearing of children, and that it is inconsistent with the due equality of the sexes. In all countries in which polygamy is tolerated, woman occupies a degraded position, and society is rude and unexpansive in its character. Nature has designed woman to be the equal of man as a moral and intellectual being; and confined to the exercise of her own proper duties as a wife and mother, she is placed in a favourable position as relates to her own happiness and the happiness of her husband. And all this can only be realised by *monogamy*—the marriage of a man with but one wife. We have deemed it necessary to state thus unequivocally at the outset

what appears to be the primary principles of human relationship; for there are not wanting parties who would endeavour to rear systems of society in which the family compact is to have no place, and parental care is to be absolved from its duties—a dream of the imagination, which the common sense of mankind will ever reject as visionary, and consider, for all good and enduring purposes, to be utterly impracticable.

Society, as has been shown, is necessarily composed of distinct families. The manner, however, in which these families should associate with respect to each other, is a question which has been often agitated, and here deserves some degree of notice. The true explanation, we think, lies in an appeal to nature.

It would appear that from the beginning of the world every nation has consisted of a certain number of families, and that each family, in its general circumstances, has been independent of others. Families, as in the patriarchal times, may have been less or more dependent on or connected with the head of a tribe; but we nowhere read of families yielding up their individual identity, and living in private community with each other. Each family has always had its own house, its own joys, sorrows, hopes, and fears. Each father of a family, a sovereign within his own domain, has been left to govern his little realm, and to undertake the obligation of finding his wife, children, and domestics in the means of daily subsistence.

A practice so universal cannot be supposed to be a violation of either nature or convenience. It has sprung up from the wants and feelings of mankind, and may be said to be a spontaneous result of unalterable circumstances. Tracing it to its true source in the mental constitution, we find that the independence of individual action affords the widest scope for personal enterprise, perseverance, and other useful emotions. No doubt it is selfish in principle, but selfishness may be productive of good as well as bad ends, and is acknowledgedly allied to some of the nobler aspirations. It is at least certain that individual independence, so far as family government, location, and industrial pursuits are concerned, is the basis of all which commands respect in civilised society.

In reply to this, it is urged that, by leaving society to spontaneous arrangement, there comes a time when each nation is consumed by its internal disorders. The clever, the industrious, and the persevering, become wealthy; vast numbers, either from lack of capacity or opportunity, sink into a state of extreme indigence; and a number become criminals, and prey on the others. There is truth in this severe statement of facts; for in every nation there are rich and poor, good and bad. Nevertheless, such a mingled tissue is only an inevitable consequence not of the mere structure of society, but of human nature, on which society is founded. If there be anything wrong, we must seek a remedy in the improvement of man's moral and intellectual constitution, not in subverting the whole organisation of society, and attempting to reunite it on fantastic, or, at all events, new and untried principles. Nor should any alarm be entertained respecting the lamentable evils which seem to be the doom of society as it at present exists. These evils, and they are great, will never utterly disappear, because human perfection is unattainable, but they will in time be much modified. In every region society goes through a period of infancy, during which many cruelties are perpetrated and privations endured; after this, as men become enlightened, the worst kind of evils gradually disappear, and others of lesser severity remain. At present, society in Great Britain and most civilised nations is in a transition state from barbarism to enlightenment. Within even the recollection of men now living, the steps in advance have been considerable, and every year adds to the number of both physical and social ameliorations. Can there be any reasonable doubt that society will continue in all respects to improve, and that much that is now matter for regret and reproach will be amended or removed?

Utopian Communities.

Ingenious men have at different times conceived to themselves the idea of a state of society, or republic, in which vice, sorrow, indolence, poverty, and other evils shall either be unknown, or at least reduced to a scarcely perceptible amount. None of these theories has gained so much celebrity as that announced by Sir Thomas More, under the name of Utopia (from a Greek word signifying *no place*). The author was chancellor of England in the reign of Henry VIII., and was a man of the highest and most honourable character. His work on Utopia was written in Latin, and the elegance with which he propounded his apparently benevolent but really satirical scheme, has made the name of his imaginary republic to be adopted in our language as a current expression to denote any plan of social economy which is founded on too favourable views of human nature to be practicable.

The work was written not long after the discovery of America, near which continent, south of the line, the island of Utopia is supposed to lie. The story of discovering this island is represented as being told by a venerable traveller whom the author met at Antwerp, and may be condensed as follows:—

'Among other countries through which the traveller with his companions passed, there was one which appeared particularly worthy of attention: this was an island situated not far from the mainland, and called the Utopia, from an old chief of the name of Utopus. The island was about five hundred miles long, and about two hundred in the broadest part; but it lay in the form of a crescent, bent together at the ends, which were narrow, and not more than eleven miles apart; so that there was a large bay of the sea, as it were, in the very centre of the country. The entrance to this vast natural harbour was, however, obstructed by rocks, and hardly safe to any except natives, who were acquainted with the landmarks in view. The other side of the island had a number of harbours; but the coast being generally rocky, the roads leading from them into the country were steep and difficult. There are in the country twenty-four large towns, all magnificently built, and spacious; the situation of each is chosen so like that of the rest, that in the very arrangement of their streets, and their general appearance, when you see one, you have a complete idea of all the others. The same language is spoken over the whole island; and the laws, institutions, and manners of the towns are similar throughout. There are none of them above a day's walk from each other, and several only about twenty-four miles. The chief town is Amaurotum, which has been chosen on account of its central situation, as being convenient for the general meeting of deputies, of whom three are chosen from each town, generally men of some age and of experience in business, for deliberating on the public affairs. The cities are so situated, that each has a large country district lying around it, which is well stocked with farm-houses, and all the materials of a thriving husbandry. The land is cultivated by the townspeople themselves, who take it in turn, one set going to labour in the country, while another remain at their occupations in the town.

The cultivators are arranged, while in the country, into families of forty free persons and two slaves; with each family there is an elder and a matron of respectable characters; and over every three hundred families there is an officer called a Phylarch. Of the forty persons who compose a family, twenty return each season to the town, and are replaced by twenty others sent from thence; so that each person remains on the farm two years together, where by this means there is always a moiety acquainted with country labour, and able to instruct the others; numbers, however, request to remain a longer time, from the pleasure they take in farming and field-work. Their business is to attend to the crops, to rear domestic animals, and to prepare wood, and take it to the towns. They rear immense flocks of chickens, which, however, they

hatch not in the usual way, but by the heat of an oven —a process in which they are very expert and successful. They raise corn for bread only, not for brewing or distilling; and for drink they have the vine, as we have, as well as the liquor of apples and pears. In laying out their land, they calculate how much corn, meat, and other produce will be wanted for a city and its dependent territory, and take care always to have a much larger quantity than is necessary, that after each district has supplied its own demand, they may be able to afford a portion in any quarter where there may be a deficiency. Whatever articles of the manufacture of the towns are wanted, the cultivators receive them on demand, without offering anything in exchange; and when the crops are ready for harvesting, the country phylarchs or overseers give notice to the authorities in the towns, upon which the whole population is set to work, and the crops are secured almost in a single day.

A description of the city Amaurotum will give a complete idea of all the others, which are as exactly like each other as may be. This place, then, is situated on a gentle slope, with a river flowing along the bottom of the declivity, which is navigable, with the waters of the tide, as far as the town; and there is a stone quay all along the bank, at which vessels lie to for delivering their cargoes. The town is of a square form; the streets long and straight, with a row of well-built houses on each side, before which there is always a paved footpath; in the rear, every house has a garden, with a door opening into it. The doors, both in front and behind, are made in such a way as to open readily with the hand, and to shut again of their own accord; but they are never locked, so that no one has any place of secrecy. They pay the greatest attention to their gardens, in which they raise abundance of the finest fruits, flowers, and herbs. Nothing can be more splendid or useful than the treasures of vegetable beauty exhibited there; and the founder of the town seems to have paid particular attention to the laying out of the gardens and garden-grounds, which the successive generations of inhabitants have continually improved.

With regard to their magistrates, every thirty families in the towns elect yearly a representative, who is called a Syphogrant; and to every ten syphogrants, with their constituencies, there is an officer or representative, who is styled a Tranibor. Lastly, the whole of the syphogrants, who are two hundred in number, after taking an oath to select the most useful candidate, choose by secret votes a chief magistrate, who is always one of four, of whom a list is given them by the people, each quarter of the city naming one. This chief retains his office during life, except there be reason to suspect his aiming at arbitrary power; but the tranibors, and all the other officers, are elected yearly. The chief meets with a council of the tranibors every third day, or oftener, if there be occasion, to deliberate on public business, or the suits of individuals; and there are always two of the syphogrants (or inferior representatives) present. It is a capital crime for the magistrates or chief to discuss public business anywhere except in the senate or great assemblies; a regulation which is enforced, that the authorities may not conspire in secret against the public liberties. In matters of great moment, a communication is made to the syphogrants, who consult their families (constituencies), and give in their opinion to the senate.

All the people are acquainted with farming, which they learn from their infancy, partly by instructions in the schools, and partly from practice, when their families are in the country. Besides this, every one is taught some other business—such as weaving, carpentry, or smith-work; and these constitute the most of their crafts. There being little variety of dress used in the island, except that those of the men and women are different (and both of them are very becoming), each family makes their own clothing. But of the other businesses, every person, male or female, learns some one, the women generally performing the lighter portions of the work; and every person for the most part following the profession of his ancestors. Their labour is not heavy; for if the day be divided into twenty-four hours, there are only six of these devoted to work—three in the forenoon, and three in the afternoon. All the remainder of the time they have at their own disposal, not for idleness or dissipation, indeed, but for any rational amusement, such as reading, or hearing lectures on various subjects, delivered by persons who make literature their business. It may be supposed that, if they labour only six hours a day, they must be very poor, and that the country will be ill supplied with everything: but this is far from being the case; and the few hours which they devote to work are quite sufficient to procure all that is wanted for the necessaries and comforts of life; of which you may be convinced, if you have remarked in other countries what immense multitudes of people go entirely idle, and produce nothing; or what a vast number, again, are employed in arts which are mere luxury and superfluity, or which injure the community instead of benefiting it: and yet these idle people and triflers consume much more of the labour of others than those who exert themselves to produce something really useful. In Utopia, on the other hand, there are but a very few persons in each city who are not employed in useful labour; even the syphogrants themselves, though exempt from working by the law, give what time they can spare from the public business to some profitable occupation, that they may afford an example to others. Students, who have been selected by the syphogrants and priests, and approved by the people, in order to follow the pursuits of literature, are exempted from manual labour; but if any of them disappoint the hopes entertained of him, he is returned to his work; and, on the contrary, any tradesman who in his leisure hours displays a talent for learning, is admitted into the class of students, and enjoys all their privileges. It is only from this class that ambassadors, priests, the senate (or tranibors), and the chief magistrate are selected.

Another circumstance contributes to the abundance of everything useful in Utopia; which is this—that no more labour is employed upon any matter than is necessary to make it useful. In other countries, the pulling down, remodelling, or rebuilding of houses, which have no fault but that they do not please the heir of the person who originally built them, occupies an immense number of workmen: among the Utopians, however, such waste of labour would be held ridiculous. In respect to dress, also, each person while at work wears a suit of clothes made of leather, or other stout materials, which will last for several years; and when they go abroad, they wear an upper garment, which is everywhere of the same colour and fashion; so that the only attention required for their clothes is to keep them clean, and in good repair. That waste of labour which is elsewhere expended upon the changing of fashions and different colours of dress, is never wanted in Utopia; and no one would either feel himself more comfortable, or be more esteemed by his neighbours, by having those endless changes which occupy so much idle time and expense in other countries.

I must now tell you about the way in which they carry on their intercourse with each other, and how the labour of one set of tradesmen procures them the necessaries which are manufactured by others. The whole people, as I mentioned, is divided into families, or small clans: and I should add, that when marriages take place between members of different clans, the females, who are not allowed to marry till the age of twenty-two, leave their own, and live with that into which they are married; while the sons, who must not marry till twenty-six, remain in the paternal family, under charge of the oldest surviving parent: no family, however, is permitted to have more than sixteen members, or fewer than ten. The city being

divided into four quarters, there is a market-place for each: to this rendezvous every family brings the produce of its labour, for each species of which there is a separate storehouse. At the same time that they thus deposit what they have produced, they take away with them what they have occasion for at home; and there is no danger that they should either bring too little or take away too much. Why should they be indolent when they have so little labour! or rapacious, or greedy, when they know that there is abundance, and to spare, for all!

Through the different parts of the town there are public halls, where the inhabitants eat together, every thirty families having a common table. They are summoned to their meals at stated hours by a trumpet or conch; but every person has liberty to eat at home if he pleases—a permission of which very few avail themselves, since the dishes at the public table are prepared by far more skilful cooks than they are themselves. The old and young are intermingled together at table, so that the latter may hear and profit by the conversation of their seniors. For the sick there are public hospitals in pleasant airy situations without the walls, where they are nursed with all care, and where every person is sure of meeting with more attention and skill than he could command at home, so that no one is reluctant to go and reside there while affected with any disease.

The Utopians have but a small number of laws, society being so regulated among them by their excellent customs, that a very few are sufficient to preserve order. They think that there is nothing more absurd among other nations than the innumerable multitude of volumes which are occupied with laws; and they ask with great reason, how can people obey rules which are either so obscure that no one can understand them, or so numerous that they cannot be read! With regard to their own laws, they think them useless if they seem obscure to the dullest peasant; and none but the plainest and most obvious meaning is admitted, all subtle and refined interpretations being cast aside.

They never make war but for some gross injury done to themselves, or more especially to their allies; but they carry on their hostilities in a very singular manner. A Utopian general would gain no credit by a bloody victory, however complete: if he cannot overcome his enemies by stratagem and artifice, with little loss of lives, he is reckoned an unskilful commander.

There are different kinds of religion in Utopia: sometimes there are even different forms of worship in the same city. The sun is adored by some, and by others the moon; while a third class pay adoration to some of the planets, reckoning these as in some sort images or representatives of the Deity. When they were informed by us of the nature of the Christian religion, it is impossible to conceive the eagerness with which many among them listened, and made inquiries. A goodly number became Christians, and no one belonging to the old religion offered the least hindrance or obstacle to any of the converts. I recollect, indeed, no instance of any person being molested on account of his religion, it being an ancient law in the state of Utopia that no man's religion shall be made a reproach to him.

The stranger recounted to us a number of other circumstances regarding Utopia, which cannot be mentioned now. I was much inclined to dispute the propriety of a number of the regulations of the community, which appeared to me exceedingly absurd; such as their mode of carrying on war, and some of their ideas as to religion; but more especially that which seemed the keystone of the whole, their custom of possessing all things in common, and prohibiting the use of money—two regulations which would overthrow, according to the common opinion at least, everything which makes the splendour and power of a commonwealth desirable to its subjects.'

Such is an account of the far-famed Utopia of Sir Thomas More. In later times, schemes not very dissimilar have been seriously proposed by benevolent speculatists for the reconstruction of society, and partly carried into practice, though with no prospect of permanent continuance. At the head of this class of projectors stand Robert Owen and Fourier, the latter a religious enthusiast in France. The plan aimed at consists in causing fifty or a hundred families, as the case may be, to live in one community, in which all are to labour for the general behoof, and all to be supported on equal terms out of the common stock. Individual property is to be unknown; all personal feelings are to be sunk in that of the community. How it is proposed to meet differences as to the education of children, religious belief, and other important matters, how evil passions are to be universally extinguished, or what is to be the consequence of the idle preying on the industrious, has never been satisfactorily explained. According to Fourier, we believe, members seriously transgressing the rules are to be expelled the community, which amounts to a giving up of the whole principle: if the community cannot reclaim and retain its evil-disposed members, the scheme is confessedly worthless. Defective as ordinary society is allowed to be, it does not eject the most vicious or the most improvident of its members—for the criminal it finds prisons and penitentiaries, and to the poor and starving it offers workhouses; even the most dissolute can pick up an alms.

Patriarchal Society—Clanship.

The patriarchal condition of society has prevailed in Arabia and other Eastern countries from the most remote periods of history. It is the most simple kind of social union. A patriarch, so called from a word signifying father or head of a family, is the head or governor of a tribe, who obey his orders, and depend in a great measure on his judgment. Generally, the office of patriarch is hereditary, but it is also sometimes elective. The most distinguished of the ancient patriarchs was Abraham, the great progenitor of the Hebrew nation, and who was originally a dweller in Arabia. The leaders of tribes in these pastoral regions are now known by the title of *Sheiks*—the word sheik in Arabic signifying the elder or eldest.

In this rudimental state of society, the tribe has usually no fixed residence, but wanders from place to place in company with its flocks and herds, in quest of pasture, or for the sake of hunting wild animals. In making their long and toilsome journeys through the wilderness, the families and tents are carried on the backs of camels. From leading this wandering life, the members of these tribes are called *Nomades*; or are said to be *nomadic* in their habits, from a Greek word signifying to wander without a fixed habitation. The wildest of the modern Arabian nomades are termed *Bedouins*, which means inhabitants of the desert. They are good horsemen, and are reputed to be little better than robbers; for they seldom scruple to waylay and plunder travellers. The only chance of passing safely through their territories consists in purchasing the favour of their sheiks, and procuring their promise of protection. All expect, even for a trifling courtesy, a present in money, called by them *bucksheesh*. These forced presents are a serious tax on European travellers in Egypt, Syria, Arabia, and other Eastern countries.

From the accounts given of the patriarchal ages in the Bible, a much more favourable idea is formed of nomadic life than a close inspection is found to warrant. Carried away with pleasing fancies respecting pastoral simplicity and freedom from the cares of civilisation, we are apt to forget that human passions are the same in all ages and countries, and that every condition of life has its own peculiar difficulties and vexations. The truth seems to be, that this roving, haphazard mode of existence is full of miseries, and that force is the only law. Mr Stephens, an American traveller, who lately journeyed through Arabia Petræa, under the hired protection of a number of Bedouins,

headed by their sheik, thus destroys the gloss which had been thrown over the nomadic social system :—

'One by one I had seen the many illusions of my waking dreams fade away; the gorgeous pictures of Oriental scenes melt into nothing; but I had still clung to the primitive simplicity and purity of the children of the desert, their temperance and abstinence, their contented poverty and contempt for luxuries, as approaching the true nobility of man's nature, and sustaining the poetry of the "land of the East." But my last dream was broken; and I never saw among the wanderers of the desert any traits of character, or any habits of life, which did not make me prize and value more the privileges of civilisation. I had been more than a month alone with the Bedouins; and to say nothing of their manners, excluding women from all companionship; dipping their fingers up to the knuckles in the same dish; eating sheeps' insides, and sleeping under tents crawling with vermin, engendered by their filthy habits, their temperance and frugality are from necessity, not from choice; for in their nature they are gluttonous, and will eat at any time till they are gorged of whatever they can get, and then lie down and sleep like brutes. I have sometimes amused myself with trying the variety of their appetites, and I never knew them refuse anything that could be eaten. Their stomach was literally their god, and the only chance of doing anything with them was by first making to it a grateful offering; instead of scorning luxuries, they would eat sugar as boys do sugar-candy; and I am very sure if they could have got poundcake, they would never have eaten their own coarse bread.

One might expect to find these children of nature free from the reproach of civilised life—the love of gold. But, fellow-citizens and fellow-worshippers of Mammon, hold up your heads! this reproach must not be confined to you. It would have been a pleasing thing to me to find among the Arabs of the desert a slight similarity of taste and pursuits with the denizens of my native city; and in the early developments of a thirst for acquisition, I would have hailed the embryo spirit which might one day lead to stock and exchange boards, and laying out city lots around the base of Mount Sinai or the excavated city of Petra. But the savage was already far beyond the civilised man in his appetite for gold; and though brought up in a school of hungry and thirsty disciples, and knowing many in my native city who regard it as the one thing needful, I blush for myself, for my city, and for them, when I say that I never saw one among them who could be compared with the Bedouin: I never saw anything like the expression of face with which a Bedouin looks upon silver or gold. When he asks for bucksheesh, and receives the glittering metal, his eyes sparkle with wild delight, his fingers clutch it with eager rapacity, and he skulks away like the miser, to count it over alone, and conceal it from all other eyes.'

The same species of patriarchal society prevails, as is well known, among the tribes of North America; each tribe being governed by its chief, and exposed to all the calamities of a state of untutored nature.

Out of the patriarchal condition of society in the East, sprung the system of clanship, long prevalent among Celtic nations. The word *clan* signifies family, and is applied to a tribe claiming to be descended from one head; the lineal descendant of which is the chief. All the members of the clan consider him as a common father and protector, to whom they owe an implicit obedience. This form of society was brought into western Europe by the Celts in exceedingly early times, and disappeared slowly before the encroachments of the Teutonic races. The last of its strongholds were the Highlands of Scotland, where it was finally abolished by law in 1748, and where it is now only known as matter of tradition or private feeling.

Slavery.

That every human being possesses a free and inalienable right of property in his own person, seems an undeniable proposition. And yet it is one which even till this day is by no means universally recognised. In certain countries, there are individuals—men, women, children—who are not proprietors of themselves; they are bought and sold, and treated as cattle; and they possess no civil rights whatsoever. A person in such circumstances is called a *Slave*—a word of modern origin, supposed to be derived from the Sclavi or Sclavonians, whom the Venetian merchant state had the cruelty to sell into bondage.

Slavery, in one form or other, has existed in the world from the most remote period of history. It existed, as we know, among the patriarchs. Joseph was sold by his brethren to a party of Midianite merchants, who carried him to Egypt, and there sold him to Potiphar (Genesis, xxxvii). A grievous famine having occurred in Egypt, the people, after disposing of all their property in exchange for corn, came to Joseph and offered their own bodies and their lands for food. Joseph complied with their request. 'Behold, I have bought you this day, and your land, for Pharaoh.' (Genesis, xlvii. 23.) These occurrences alone, mentioned without comment, show that selling and buying human beings was customary in those early times. From other parts of the Scriptures, we learn that a state of bondage, which was nearly equivalent to modern slavery, was a recognised institution among the Jews. So also did slavery exist among the ancient Pagan nations—the Phœnicians, the Greeks, the Romans.

Nothing is more certain than that, in all countries in ancient times, there was a mass of the population in a state of compulsory and perpetual servitude. Even in what are termed the freest states of antiquity, a large proportion of the people were slaves, and possessed no civil rights. At one time Athens contained four hundred thousand slaves, and only twenty thousand freemen. The practice of slavery arose out of the selfishness of barbarism, and did not appear to its perpetrators either sinful or unjust. Debtors were seized, and, in liquidation of petty claims, sold like ordinary property by their ruthless creditors. Gamblers, having lost everything, staked their persons as a last chance; and being unsuccessful, became the bondsmen of the fortunate winner. Men, for their crimes, were deprived of liberty, and publicly sold into bondage. In cases of famine, parents disposed of their children, to relieve their own wants. And lastly came war, the scourge of mankind, and the fruitful cause of slavery in all ancient nations. 'It was a law established from time immemorial among the states of antiquity,' says a Greek author, 'to oblige those to undergo the severities of servitude whom victory had thrown into their hands.' There was an exception however, in the case of civil war, the prisoners taken in which were not made slaves, but generally massacred. Besides the regular wars between nation and nation, it sometimes happened that a vagrant population overran an adjoining country, and made the peaceful and dispossessed inhabitants their slaves. Thus the Spartans were served by a race of hereditary bondsmen, the old inhabitants of the district, called Helots—a term afterwards used by the Romans to designate men in a servile condition. The unfortunate Helots of Sparta occasionally rose in rebellion against their masters, and attempted to gain their liberty; but these efforts were always suppressed with merciless slaughter.

We have, in these and other circumstances, the most conclusive evidence that slavery in ancient times existed on no ground of philosophy or morals—was not sustained on any fine-spun plea that one man was radically inferior to another; but was, as it is still, only a result of rapacity and force. It was long, indeed, before mankind could be brought to recognise its iniquity or impropriety; and even yet certain nations find a difficulty in viewing it in its true light. There being thus still some controversy on the subject, and liability to misconception, we think it proper to state that, according to an enlightened philosophy, each human being retains inherently the right to his own person, and can neither

sell himself, nor be legally bound by any act of aggression on his natural liberty. 'Slavery, therefore'—we quote from the Conversations Lexicon—'can never be a legal relation. It rests entirely on force. The slave, being treated as property, and not allowed legal rights, cannot be under legal obligations. Slavery is also inconsistent with the moral nature of man. Each man has an individual worth, significance, and responsibility; is bound to the work of self-improvement, and to labour in a sphere for which his capacity is adapted. To give up this individual liberty, is to disqualify himself for fulfilling the great objects of his being. Hence political societies, which have made a considerable degree of advancement, do not allow any one to resign his liberty, any more than his life, to the pleasure of another. In fact, the great object of political institutions in civilised nations, is to enable man to fulfil most perfectly the ends of his *individual* being. Christianity, moreover, which enjoins us, while we remain in this world, to regulate our conduct with reference to a better, lays down the doctrine of brotherhood and mutual love, of 'doing as we would be done by,' as one of its fundamental maxims, which is wholly opposed to the idea of one man becoming the property of another. These two principles of mutual obligation, and the worth of the individual, were beyond the comprehension of the states of antiquity, but are now at the basis of morals, politics, and religion.'

Regardless, or ignorant of such principles, the most enlightened nations of antiquity, as we have said, gave the broadest sanction to slavery; and to this, among other causes, was doubtless owing their final dismemberment. The influence of Christianity modified slavery, and finally contributed to extinguish it in European nations; but till the present day, as is well known, the slavery of negro races, or of persons of colour, is maintained in all its horrible rigour in some of the states of North and South America. In Africa and Asia the institution remains almost unchanged.

Civil Society.

Civil society is constructed on a system of individual efforts and interests. Each person is expected to act an independent part, controlled only by law and usage. While every one is free, therefore, he is at the same time bound to give obedience to all existing laws, and respect to all properly-constituted authorities. In consequence of the general freedom which every one enjoys, and in contradistinction to the plan of social communities, society is said to be founded on the *competitive* principle. No one being interfered with, all are left to compete with each other in industrial enterprise. This may, and does, have the effect of causing a great disparity of condition—men of commanding abilities, steadiness, and perseverance, usually attaining distinction and wealth, while those of weaker capacity, or who are less fortunate, lapse into poverty. It is to be regretted that such is the case; but, all things considered, freedom of individual enterprise is best, and must ever be the basis of civil society. By holding out a premium for diligence, it induces mental culture and exercise, and affords all an equal opportunity of distinguishing themselves. It likewise ought to point out the duty of establishing systems of universal education, by which we should be assured that every one at least possessed the elements of instruction, and means of self-advancement. With respect to those who, from absolute incapacity, and other unavoidable circumstances, become poor, it is now a generally settled principle that they have a claim in law, as well as on principles of humanity, for support from their more fortunate fellow-creatures.

The organisation of civil society, though possessing a general resemblance, differs in a few particulars in every country. The chief difference consists in the diffusion of privileges. To understand distinctions of this nature, it is necessary to peruse a course of history, ancient and modern. Little can be learned from looking at the present aspects of things; we require to search the records of human progress for the origin of almost every institution, as well as for the philosophy which may be drawn from it.

Throughout Europe, society has generally arisen from similar circumstances. The rudimental germ of every state was a handful of adventurers, who, by military prowess, made themselves masters of the country. The leading men in such enterprises were chiefs with retainers. The principal chief became king; the chiefs assumed the character of an aristocracy; and the retainers, with the inhabitants whom they helped to subdue, from being at first serfs, finally attained the rank of a free democracy. It was long, however, before this latter result was achieved. For many ages, the chiefs or nobles holding lands by a military tenure from the sovereign, formed a feudal aristocracy, by whom in reality the whole system of government was conducted. The idea of imparting privileges to the common people was long in dawning on the mind; and if the nobles had had the power, these privileges never would have been granted. What, however, is not less interesting to know, the people were not by any means unanimous in desiring freedom. As long as they were serfs or vassals of great men, they were fed, clothed, and protected; and such was the meagreness of capital, the absence of any means for individual enterprise, that freedom would in many cases have been equivalent to starvation. (See History of the Middle Ages.)

The true source of general freedom is the crown. From having been companions and assistants of the sovereign, the principal barons were constantly encroaching on his prerogatives. Sometimes the concessions of the crown, as those of Magna Charta, made by King John, were necessary and desirable; but more frequently the nobles were inclined to exact so much power in the state as would have rendered the king's authority a nonentity. The danger of these encroachments caused the monarch to seek aid from the commons. With the view, therefore, of raising up a means of protection in this quarter, he encouraged the building of cities, to whose inhabitants he gave certain important privileges. The civic corporations, therefore, must be viewed as the cradle of freedom. From them sprung much of the present constitution of society. Relying on their privileges, and surrounded by walls, these burgher communities defied the nobles, and sided with the king. From this time, therefore, the feudal principle declined, serfs were gradually emancipated, and ultimately every man was declared to be equal in the eye of the law.

It is necessary to be thus particular, for a notion prevails among the humbler classes that they have been deprived of rights enjoyed by their ancestors. History most explicitly shows that, in early times, the peasantry and operative bodies possessed no privileges whatever. Magna Charta does not so much as mention them. Society, in fact, has been quite a progressive development. Little by little, privileges have been widened in their sphere, and are still widening as circumstances render it desirable. Doubtless it may be alleged that all men are equal, and deserve to possess equal privileges. But to this principle, true in the abstract, there are some practical objections, which will afterwards engage attention. Meanwhile, we desire to fix attention on the vast impulse given to civilisation by the erection of cities.

Cities.

It is to cities or large towns that mankind chiefly owe the blessings of civilisation, and the valuable institutions which they now enjoy. With cities, everything that is great and glorious—arts, science, literature—began, and after beginning, was duly fostered. Through their means civil society began to assume a more systematic character. The division of labour, the refinements of social intercourse, the development of laws caused by the conflicting interests of many people living closely together, the idea of equality of rights, the growth of patriotism, springing from the sense of

advantages enjoyed, and the exertions necessary to maintain them, were the salutary consequences of the establishment of cities.

Under the mild sky of Asia, Africa, Greece, and Italy, cities were built first, and in the greatest number. The Phœnicians and Egyptians particularly distinguished themselves by the erection of cities, which soon attained a high degree of wealth, and consequently of civilisation. The Egyptians considered their city Diospolis (Thebes) older than any of the Greek cities; and Pliny says that Cecropia (erected in Attica by Cecrops, 1582 B.C., and afterwards called Athens) was the oldest city of Greece. Several confederations of cities existed in the ancient world; for instance, the Phœnician, consisting of the cities of Tyre, Sidon, &c.; and the Achæan league, formed by the most important cities of Greece, in order to strengthen themselves against the power of Macedon. Under Augustus and his successors, the Romans began to establish colonial cities in Germany, having done the same long before in Gaul, Spain, Africa, &c. In Switzerland, they first erected cities about A.D. 70, which, however, were mostly laid waste by the Alemanni, and subsequently rebuilt under the government of the Franks (A.D. 496).

The Germans, accustomed to a wild, rambling life, did not show any disposition to live in cities, until Charlemagne laboured to collect them together in settled abodes, from his desire to civilise them. Henry I. distinguished himself particularly in this way, and on this account has been called by some Henry the City-builder. He gave the cities great privileges, in order to induce his subjects to live in them, and thus laid the foundation of that power which at a future period contributed most to break down the feudal system. In many cities, imperial castles were erected to protect the inhabitants; and the insupportable oppressions and even cruelties exercised by the feudal lords upon their peasants, or by the wandering knights and robbers, drove many people into the cities. The attacks of the neighbouring lords gave firmness to their union, and compelled them to cultivate their resources. Commerce, and the various arts and trades, were soon cultivated within their walls, and their wealth and respectability increased. They soon became sensible of the want of a better system of laws and administration than that which prevailed around them, and the principle of equal rights and laws was quickly developed.

One of the most important remnants of the great fabric of ancient civilisation, was the cities of Italy. What the world would have become without them is not to be calculated. In spite of their bloody contests with each other, and the vices to which these gave rise, they must be considered as having lighted the torch of modern civilisation. It was not the monarchies, it was not the courts of the great princes, it was the cities of Northern Italy, which opened the way for the progress of improvement; and the petty princes of Italy caught from them the spirit which prompted their efforts to promote it. Under the reign of Conrad III. (1138-52), the cities of Lombardy, and particularly Milan, which stood at their head, had acquired a high degree of wealth and power, and had formed themselves into a confederation. The struggles between the emperors and these cities form one of the most important portions of the history of the German empire and of Italy. Frederick I. in vain demolished the powerful city of Milan. It was soon rebuilt, and the cities of Lombardy, in alliance with the pope, obliged the emperor to conclude with them a very disadvantageous peace at Constance. Two other confederations of cities, highly important, were formed during the interregnum of the German empire, between 1256 and 1272. One of them was the powerful league of the Hans towns; the other, the confederacy of the High German and Rhenish cities, from the foot of the Alps to the mouth of the Maine, established by Walpode of Mentz, in 1255. A similar confederacy, and a very important one, was that of the Suabian cities, instituted in 1488, to repel the outrages of the feudal lords and knights. By degrees, great cities arose in the different countries; and wealth, industry, knowledge, and equal laws, spread from them through Europe.

Much has been said and written against the immorality of large towns and cities, and the fact cannot be denied; but immorality is not confined to them. The petty vices of small places, though less glaring, are perhaps equally injurious, making up in constant repetition for their comparatively less degree of noxiousness. It is much more difficult, moreover, to preserve one of the most important possessions—independence of character—in a small place than in a large one. The cry against the immorality of large cities should not make us forget the many great and admirable things which mankind have been enabled to perform by means of the collected strength of talents and resources combined in large cities, and their influence in forming the character of great men, who could not have acquired elsewhere their variety of accomplishments, and the well-proportioned cultivation of their various faculties. At the same time, we must allow that it is a very injurious policy to strip a whole country of all which illustrates and ennobles it, in order to swell the treasures of the capital.

Capitals, in the modern meaning of the word, can hardly be said to have existed in ancient times; at least they were then only the seat of the sovereign, but not the centre of all the national activity, Rome only perhaps excepted; but this city was for a very long time, the state itself, and, at a later period, the tyrant of the whole empire, rather than the head of a well-organised body. In Asia there existed, indeed, in ancient times, capitals of very large empires; but they are not to be compared to the capitals of large modern empires, since the channels of communication and intercourse had not then reached that degree of perfection which enables them in our days to bring into close connection all parts of a country. Each province was therefore left much more to itself. It would be difficult to determine whether the good or evil consequences of large capitals in modern times are greater, and such an examination would far exceed our limits; otherwise it would be very easy to point out, in every department of civilisation, in science, social intercourse, arts, &c. both salutary and pernicious effects resulting from the influence of capitals. It seems to us a matter of little doubt that it must be regarded as disadvantageous to any country if the capital ceases to be the concentration of the skill, genius, and strength of a nation, for the benefit of the whole, and by a disproportionate superiority destroys the importance of the rest of the country, as we find to be the case with Paris, which, as has been often observed, contains France. In Germany, the state of things is quite the reverse. There is no city which may boast of being the point of national concentration. The consequences have been very advantageous to science, and somewhat disadvantageous to literature. In politics, this want of a central point has had melancholy consequences for Germany. London never exercised that degree of influence over England which Paris has over France; one reason of which may be, that the institutions for the diffusion of knowledge are not seated in the metropolis. The system of concentration has, there is little doubt, been carried to an extreme in Europe—the best of everything having been collected in the capitals, and the provinces having been almost stripped of pictures, libraries, &c. In many countries this fault is acknowledged, and a return to a more equitable system is perceptible. The injury done to the provincial towns in Britain by the concentration of institutions of various kinds in the capital, is likely soon to be greatly modified, by the establishment of railways and other improved means of communication, which will tend to give all parts of the kingdom an equality of advantages.*

* The above observations on cities are abridged from an instructive article in the 'Conversations Lexicon.'

GOVERNMENT.

If all mankind were naturally virtuous, and disposed to act justly and kindly towards each other, there would be little use in establishing any kind of government. According to ancient poets, there was once a period called the Golden Age, in which there prevailed universal peace and loving-kindness, and vice had no existence. Never was there such a period. The farther back we go in history, we find that society was the more rude. Civilisation has been a plant of slow growth, often retarded, and often springing up afresh. The world never was better than it is at this moment. According to all experience, society cannot exist without some species of government. It must possess a power to enforce order, to prevent the strong from oppressing the weak, to chastise vice, and perform many other necessary functions. The government may be good or it may be bad, but a government of some kind there must be. There will always, in every society, be some who have a desire to rule over others—to make others work out their purposes—and some who are satisfied to submit to the domination of those who are more ambitious. There will always be among those who are ambitious of governing, some who unite to the desire the talents necessary to enable them to attain their ends, and others who do not; some who seek to found their power upon their own force, or upon the prejudices of others, or upon their power of persuading or convincing men that they know better what is good for them than they do themselves. The propensities and faculties which induce and enable some men to aspire to be leaders, others to contest the leadership with them, and others, again, contentedly to follow the lead, are implanted in them by nature; they cannot help having or exercising them. But it is with these elements of our nature as it is with our instinctive propensities to eat and drink, to love or hate; by the proper use of their knowing and reflecting powers, men may so control and direct them, as to render them instruments for producing great good and happiness to the whole human race.

FORMS OF GOVERNMENT.

The patriarchal and clanship systems of government have been already adverted to. With these mankind may be said to have made a beginning. The next step in progress seems to have been a government by kings. The origin of kingly power is fighting. He who was the bravest warrior, assumed, or was given, the office of king, with a supreme dictatorial authority. In some ancient nations, a government of priests superseded that of kings. This species of government was called a *theocracy*, from *Theos*, the Greek word for God; it being represented by the priests that they ruled only according to the decrees or will of God. Although to a great extent based on superstitious fears, the priestly governments were an advance on governments of mere fighting men, because they preserved tranquillity, and, on the whole, were for the benefit of the people.

Out of these early systems of government, in conjunction with the experience of ages, all existing governments have sprung. Although, however, there is nothing of which mankind has had so extensive or so varied a knowledge, it is till this hour undetermined whether there be such a thing possible as a perfect government. Much has been written on the subject; but the result of all inquiry seems to be, that nothing is certain, except a few general principles. Those, therefore, who contend for any particular model of government, without a due regard to circumstances, only pursue a delusive fancy. No species of government that could be devised will apply universally. Schemes the most brilliant on paper come to nought when tried by the rude shocks of daily events. Forms of government, in short, are as yet arbitrary and unsettled; and the only practical principle of any value which we know is, that every nation should possess a government in harmony with its state of civilisation, and the tastes and habits of the more enlightened portions of the community.

As there is, in the present condition of the world, no such thing as a universally suitable form of government, so the form of government of any particular country requires to vary and alter its character in adaptation to the advance or retrogression of society. In proportion as the people are ignorant and turbulently disposed, the government requires to be strong and arbitrary; and according as the people are enlightened, and disposed to live peacefully, the government may be mild and liberal. The ambition of kings and emperors no doubt is observed to sustain an arbitrary rule in circumstances where greater freedom should be accorded; but as a general principle, it is evident that arbitrary military governments can only exist permanently where the people at large are incapable of guiding and enjoying free institutions. Sooner or later, the government of every country must bring itself into harmony with the society it overrules, otherwise it will suffer the risk of being overthrown. The cause for this is evident. It cannot escape notice that every government acts upon its subjects by means of themselves; it employs its subjects to keep its subjects in obedience. The consequence of this is, that in every country, and in all ages, the most seemingly despotic government is kept in check by the opinions of its subjects. No government has ever with impunity set at defiance the opinions, be they well-grounded or be they prejudices, moral and religious, of its subjects. The Ottoman sultan, at the time when his power was greatest, never dared to act contrary to the law of the Koran. Henry II. of England was obliged to humble himself before the religious sentiments of his age, outraged in the person of Thomas-à-Becket. Civil government—political action—is human ingenuity working by human means. It is this necessity under which every government lies, of governing its subjects by its subjects, which puts the whole community in possession of an engine, by the proper application of which, government may be obliged to work for the general good.

Government being thus compelled to a certain degree to make justice and the good of the community its aim, it is important that the community be so enlightened and organised in opinions and wishes that it will easily and unobtrusively act on the controlling authority. There is another object to be gained by thus enlightening and organising the people, besides that of making them an efficient check upon government when it goes wrong; it is only by enlightening and organising the people that they can be rendered capable of lending due force to the operations of government, when these are what they ought to be. An unenlightened people is quite as likely to entertain mistaken notions of what is for its good as correct ones; it is quite as likely to oppose government when it tries to do what is right, and to support it when it tries to do what is wrong, as the reverse. Government was in the right when, about the year 1780, it repealed some of the worst enactments against the Catholics; but the people were so far from heartily approving of this act of justice, that Lord George Gordon's riots in London, and the burning of Catholic chapels in Edinburgh, had nearly frightened government out of its good intentions.

The first step, then, in making such arrangements as are necessary for keeping government in its just and useful line of action, is to enlighten the people. There goes more towards *enlightening* the people than merely giving them school instruction, however thorough and extensive that may be. The people require to take every opportunity of acquiring knowledge, of extending their stock of ideas, of elevating their tastes, and of cultivating a brotherly benevolence. The great retarding influence in every nation has been less the arbitrary will of government, than the mass of ignorance which has nestled in the bosom of society. A consideration of this circumstance ought to temper observations on the strictly monarchical and aristocratic forms of government.

Aristocracies.

An *aristocracy*, a class of privileged nobles, has its origin in the circumstance that greater skill, enterprise, intelligence, and perseverance, at first threw a comparatively great amount of wealth and power into the hands of a few families; that the management of that wealth, and the exercise of the power and influence, were occupations calculated to give a greater practical development to the propensities and faculties of their descendants, than the routine drudgery of those who earned their daily food by their daily labour. We have no desire to palliate the evils of aristocratic government. That degree of enlightenment which enables men to lord it over others, is not necessarily accompanied by that higher enlightenment which teaches the beauty and utility of self-control, and the exercise of justice to all. But we must not, therefore, shut our eyes to the fact, that aristocratic government is one of the stages through which all societies must pass in their way to something better; that society advances as man walks, by putting one part of the body foremost, and dragging the rest up to it; that the love of power, and skill in acquiring and exercising it, must be realised in the few, in order to excite the desire of a share of it in all. That inequality of civilisation which gives rise to aristocratic power and influence, exists in many different forms and modifications. Even in our own country an uncivilised class is found—that unfortunate class which supplies the precarious demand for the lowest kinds of unskilled labour, and which fills our police-offices and other courts of justice with the greater number of the victims to the security of society.

In a rude society, there is wanting that enlightenment which is necessary to confer upon the subjects or citizens the power of keeping their government in the path of its duties. In a partially-civilised society—a society in which some classes are considerably advanced in civilisation, while others are still rude, helpless, and ignorant—only a portion of the citizens will be able to exercise this control. They will exercise it to their own advantage, neglecting the interests of the powerless classes, most frequently from thoughtlessness, but sometimes at the impulse of motives still less excusable. The only guarantee men can have for good government, is their *power* to exact it; and the foundation of that power is knowledge or intelligence—intelligence imparted by civilisation, and heightened by teaching—knowledge diffused through every section of the community. Wherever there is an ignorant class, it will be weak; and wherever men are weak, they will be oppressed. No chain can be stronger than its weakest link; no society more powerful than the most ignorant section of its members.

Experience has shown to both governors and governed that the preservation of rights from attempts at invasion is a paramount duty. The Roman plebeians, as measures of self-defence, obtained from their rulers, at different times, *tribunes* invested with power to guard their rights, the right of electing one of their own number to be consul, and various other concessions, all which at the time appeared to them to be sufficient to assure them of just government in time to come. In our own country, Magna Charta and the Bill of Rights were bargains struck between the governors and the governed for the same purpose. All these arrangements, whether well adapted to promote the end in view or not, are what are called constitutions, or constitutional governments. They are bargains struck between the government and the people at large, awarding to each party certain powers or privileges, which the other becomes bound to respect. The object in view is to render it possible to check those evils at the very outset, which, if allowed to go on, lead to revolts and revolutions—to enable the people, by keeping a steady watch over the motions of their rulers, to mark their first aberrations from the right, to remonstrate in time—to prevent injustice, instead of revenging it.

Constitutions of government have been devised and adopted as various as the habits, opinions, amount of wealth and knowledge, and distribution of them among the people who have devised them. A constitution is adopted in the belief that it will secure the enjoyment of their just rights, alike to the governors and the governed; it is an arrangement by which the privileges of all are equally secured; or, to use a familiar explanation, it is a bargain made between the governors and governed, or among the whole members of society mutually, as to how the government shall be conducted, so as to insure civil and religious liberty—liberty of action, and liberty in the expression of opinion, within certain legal limits. A constitutional is thus the highest form of government—the only kind of government worthy of a civilised community.

Despotisms.

At the present time, the greater proportion of the governments throughout the world are of the character of *despotisms*, and comparatively few possess what are called *constitutions*. Of the multifarious class of despotisms which exist among barbarous nations, it is here needless to say anything; for the question of form of government only becomes interesting when applied to a wholly or partially-civilised people. The three great despotisms in Europe are Russia, Austria, and Prussia—though the latter is now perhaps entitled to be removed from this class, in consequence of the king having granted a modified constitution. Austria and Russia are rigorous despotisms, each being governed exclusively by an emperor. In these countries, any one can be legally seized, without previous notice, and transferred to a dungeon for life, or sent as an exile to a distant part of the empire. The press is under a rigorous censorship, travelling is regulated by passports; and the whole people are under the eye of a strict military police. We may be sure that the community which submits to all this is still in a transition and unsatisfactory condition.

Constitutional Monarchies.

Europe abounds in constitutional governments, but many of them are scarcely entitled to the name. Sardinia, Saxony, Sweden, Hamburg, and all the smaller German states, have constitutions of one kind or other; that is to say, the king, grand-duke, chief ruler, or by whatever title he is called, is restricted in his designs by estates composed of delegates from different orders of the people. We should consider it quite useless to present detailed explanations of these constitutions, because all, or nearly so, are little better than a mockery. The reigning monarch can either directly neutralise the will of the estates, or he and they, together or separately, are under the influence of armed intervention. The Dutch have a constitution, but they have no right of public meeting for political objects; their press is under a censorship; all must carry passports; and every citizen, in any kind of trade or profession, is required to pay for a license. The infant and still disorganised constitutions of Spain and Portugal it is unnecessary to notice. At present, Germany is making efforts to establish a constitution of the different states collectively; the probability is that these aims will not be realised without much disorder and suffering.

British Constitution.—From the raw and ill-regulated constitutions of most continental nations we ascend to the old-established and well-guaranteed constitution of the United Kingdom of Great Britain and Ireland. The government of this large empire (which we need not here particularise, as it will be fully treated of in our article CONSTITUTION AND RESOURCES OF THE BRITISH EMPIRE) is a perfect anomaly, and, though frequently imitated, has never, in a monarchical form, been excelled. The legislature, as is well known, consists of a hereditary sovereign (king or queen, as the case may be), a hereditary House of Peers, and an elected House of Commons. A *Parliament* is the term used to express the collective bodies of King, Lords,

and Commons. Electors of members of the House of Commons must be native or naturalised subjects, males of twenty-one years or upwards, of sane mind, not concerned in the management or collection of the revenue, not holding any office in the metropolitan police, and not legally convicted of perjury, subornation of perjury, or bribery. In counties, an elector must be possessed of property in perpetuity or liferent to the value of £10 yearly, or lands held at a yearly rent of £50. In cities or boroughs he must be proprietor of a house or shop valued, along with the land attached to it, at £10 yearly and upwards; or must occupy premises for which he pays a rent of at least £10 per annum.

Such, with certain modifications, is the principle on which members are elected. In practice, it is found that much of the elective privilege is exercised by, or under the influence of, the landed gentry, in which we include the titled aristocracy of the country. At no time have what are called the lower or working-classes (freemen excepted) possessed the elective privilege; and it has only been since the Reform Act of 1831 that the middle classes (shopkeepers, master tradesmen, manufacturers, farmers, &c.) have had the semblance of direct representation. With this alteration, however, it cannot be said that the legislature has undergone much material improvement. Too frequently the members are still nominees of the landed gentry, or of corporations; and so much time is usually spent in electoral intrigues, parliamentary debates which lead to nothing, as well as the conciliation of parties, that the business of the nation is continually falling behind, or but indifferently executed.

In whichever way it is viewed, the legislature of the United Kingdom is essentially the reflex of the landed gentry and aristocracy, and consequently the interests of these classes are uniformly the chief matter for consideration. The next great interest cared for has till lately been the West India interest; next the shipping interest; next the military and naval interests; and lastly, the commercial interest, and the interest of the people. The executive, reposed in the hands of a responsible ministry, takes its character from these competing interests. The execution of any project of law or government is, to all appearance, rarely a result of principle, but in almost every case an immediate consequence of temporary expediency. Power is attained by skill in gaining a number of supporters, and retained by skill in keeping them together. So much of the British statesman's efforts, during his apprenticeship to power, and his exercise of power, are devoted to the getting and keeping of power, that he is necessarily deficient in natural and acquired administrative talent. The manner in which the administrative functions of government are executed, depends upon the industry and honesty of officials not responsible to public opinion, not liable to be dismissed unless convicted of gross dereliction of duty, and of whom their chiefs ask little more than sufficient attention and skill to save them from successful criminations by opposition. This kind of organisation weakens the direct pressure of public opinion upon administration; and, at the same time, by encouraging personal canvassing for political support, and the cultivation of impressive oratory, diverts public attention from the dry business of government, to sympathise with personal squabbles, and attention to abstract questions, more imposing, but less immediately important, than practical details. The consequence is, that the British government, more than any other in Europe, has been characterised by the expenditure of immense energy, with very disproportionate results.

Whether any further introduction of the democratic principle (lowering the elective franchise) into the constitution would improve its qualities, is extremely doubtful. The people, taken in the mass, are still far from being instructed. A vast number can neither read nor write; and such is the distressing state of poverty and wretchedness of large communities in towns, that, with their small knowledge of public affairs, and liability to be corrupted, it is to be feared they would appoint men of inferior qualifications, or whoever paid them most liberally. The freemen voters (working men) of Norwich, and some other towns, make a regular sale of their votes on the occasion of elections. In this strangely-complicated condition of affairs, the only real restraint on government is public opinion, expressed through the medium of the newspaper press and public meetings. Without these two qualifying elements, the government and legislature would be, not only in name, but in character, a powerful oligarchy. As the case is, the restraint, though clumsy, is, on the whole, efficacious; and therefore, with all its errors and anomalies, the constitution is one of the most favourable to civil liberty. The very weakness of the executive, as respects the means of keeping its place, and its obligation to conciliate parties, is highly favourable to popular freedom. In no monarchy on the face of the earth is the executive so liberal—that is, interferes so little with private conduct. Under its administration the following important conditions are secured:—Liberty of speech within constitutional limits; a similar liberty of the press in all its departments; liberty of personal locomotion, no passports being required; liberty of carrying on almost every branch of trade without inquiry or license; liberty of meeting in masses to be instructed by lectures on political or other subjects; liberty of meeting to discuss any political topic, general or local; liberty of presenting petitions to parliament and memorials to the crown; religious toleration, and liberty for the performance of all forms of worship; liberty of setting up schools to instruct pupils in any branch of learning; protection from the law to life and property, without respect of person; privilege of trial by jury, and of forcing on a trial for any alleged offence; privilege of being held as innocent till proved to be guilty; incorruptibility of judges, these being no way exposed to intimidation either from power or popular prejudice. To these great bulwarks of civil liberty may be added the absence of military conscription; the non-existence of fortified or walled towns; the promptitude with which riotous proceedings are quashed and the peace preserved; and the absence of any restriction to prevent the most humble individual from rising to the highest rank and consideration. The drawbacks on all these advantages may be comprised in the following circumstances:—The existence of a set of laws so complex as to be unintelligible, and so expensive in administration, that legal redress, as far as private interests are concerned, is almost beyond the reach of the lower classes; certain restrictions on free commercial intercourse with foreign nations; the too prevailing treatment of all great questions in parliament with reference to classes instead of to the whole people; and lastly, the absence of a national system of education, which might in time elevate the minds and morals of the people, and altogether produce a more wholesome social condition. Fortunately, these circumstances are all of a nature which admit of amendment; and they will, as a matter of course, be amended, as *public opinion, enlightened by knowledge*, is brought to bear upon them.

Republics.

A republic or commonwealth is a form of government in which the people, or at least a large portion of them, are acknowledgedly the source of power, and have the direct appointment of the officers of the legislature and executive. There are few of this class of governments in existence. The only republics worthy of the name in Europe [we lay aside consideration of the untried, and, we may say, yet unconstituted republic of France] are those of the Swiss cantons; each of which is a territory of generally a few square miles in size, and inhabited by a few thousands of people, chiefly engaged in husbandry. In these cantons there are no great properties, and no families equivalent to our landed gentry. There are some wealthy and intelligent merchants in the large towns; but the bulk of the population are a hard-toiling race of small farmers,

and little is seen above a condition of mean mediocrity. The legislative and executive functions are conducted in accordance with this state of things. Some of the laws are contemptible, from the narrow-minded views they exhibit—such as those in some cantons to prevent dancing, and to prevent the purchase of houses or land by strangers; but other enactments, particularly as to freedom of trade, are much to be commended. These republics, centering in a general diet or congress, are greatly under the influence of Austria and other monarchies, by which, indeed, they are in a great measure tolerated only from mutual jealousy, and because the country is in some places almost inaccessible to hostile invasion. A constant drainage of the Swiss overplus population into France and to North America, helps to avert the catastrophe of a universal degradation to semi-pauperism.

On the continent of America, various republics have been founded on the wreck of the colonial institutions of Europe. The principal is the United States of North America, now upwards of half a century old. The form of the legislature and executive is very nearly that of England; the main difference being an elective President as chief magistrate, instead of a hereditary sovereign, and the appointment of judicial and other functionaries by the people, instead of by the crown. The country is not one, but an aggregation of republics; each state being independent of the others as respects internal management. The power of legislation for the States, in their united character, is vested in a House of Representatives and a Senate, jointly forming a Congress. The House of Representatives is composed of members chosen every second year by the people of the United States. The electors in each state are required to have the qualifications requisite in the electors of the most numerous branch of the state legislature. Representatives are apportioned among the several states of the Union according to their respective numbers, which are determined by adding to the whole number of free persons (including those bound to serve for a term of years, and excluding Indians not taxed) three-fifths of all other persons. The House of Representatives consists of one member for every 77,700 persons in each state, estimated according to this rule: the enumeration is made by a general census taken every ten years. No person is eligible as representative who has not completed his twenty-fifth year, and been seven years a citizen of the United States, and who is not, when elected, resident in the state for which he is chosen. The Senate of the United States is composed of two senators from each state, elected by the legislature thereof for six years. One-third of the Senate goes out, and is replaced by a new election every two years. A senator must be thirty years of age, nine years a citizen, and resident in the state for which he is elected. All members, both of the general and state legislatures, are paid for their services.

The President is elected by the whole people, for a term of four years: at the close of that period he may be re-elected; and, with the exception of three, all the presidents of the United States have been re-elected for a second term. Each state appoints a certain number of electors, who meet in their respective states, to vote for President and Vice-President, one of whom at least shall not be an inhabitant of the state. In Delaware, South Carolina, and Tennessee, the legislature chooses the electors; in Maine and Maryland, electors are chosen by the people voting for one or more in each district; in all the rest of the states, they are chosen by a 'general ticket,' upon which the whole of the electors vote. The electors transmit sealed lists of all the persons voted for as President, and all those voted for as Vice-President, to the President of the Senate, who opens the lists, and counts the votes, in the presence of the Senate and House of Representatives. If for the person having the greatest number of votes for President, a majority of the whole electors have voted, he is declared President; if fewer, the House of Representatives elects by ballot one of the three who stand highest on the list. If for the person having the most votes for Vice-President, a majority of all the electors have voted, he is declared Vice-President; if not, the Senate names one of the two who stand highest on the list. The President and Vice-President must be natural-born citizens, thirty-five years of age, and fourteen years resident within the United States. The principle of electing representatives to the state legislatures is almost that of universal suffrage; in most instances, every male citizen above twenty-one years of age who has resided a year in the state is an elector.

With an immensely large unoccupied territory, and general thinness of population, it is impossible to draw any just inference as to the stability of this still comparatively raw and untried republican government. It is suitable to the present condition of the country; but whether it will maintain this character after its population has become as dense as that of England, and great diversities of wealth and intelligence have arisen, is a question which time alone can determine. In the meanwhile, the general character of the executive is feeble. The people, in a sense, are masters of the law, and have it in their power (in virtue of elective privileges) to intimidate its officers, or absolutely to set them at defiance. In the middle and eastern states, the efficiency of government for the repression of crimes is about the same as in Great Britain; but in the western states neither life nor property is safe from popular outbreak. The prevalence of slavery in the southern states aggravates this evil: personal security in New Orleans is at a lower ebb than in Italy or Madrid. Still, with these drawbacks, the United States is a great nation, in which civil freedom is on a grand scale, and is worthy of the enlightened community which has established and supports it.

Revolutions.

A revolution is the overthrow of a government by some kind of convulsion out of the usual course of law, and the establishment of a new one in its stead. Modern history contains several examples of revolutions:—The deposition of monarchy and execution of Charles I., and the establishment of a Commonwealth, with Cromwell as dictator, formed the greatest revolution which has occurred in England, though it is never spoken of under that definition. The change of dynasty in 1688, with the guarantee of a constitution, is referred to as *the Revolution*, and no doubt it was the commencement of a new system of government. This revolution had the singular merit of being effected with little or no violence. The revolt of the American colonies, and their assumption of independence, was a distinctly marked revolution, effected by military force, and crowned with a degree of success which astonished Europe. It was shortly followed by the revolution in France in 1789, to the violence and consequences of which no parallel is found in history.

Revolutions are almost invariably a result of misgovernment. Tenaciously clinging to old usages, and opposing themselves to every species of equitable reform required by alterations in society, governments sometimes, as in the foregoing instances, become so repugnant to the feelings of the nation, that at length a rebellion ensues, and if successful, it becomes a revolution. The revolution which placed Cromwell at the head of affairs in England, originated in Charles I. levying taxes without the concurrence of parliament. The revolution of 1688 was caused by James II. assuming arbitrary powers vexing to the nation. The American revolution occurred in consequence of government imposing taxes on the colonists, while they were not represented in parliament, and therefore in violation of the constitutional maxim of—no taxation without representation. The cause of the French Revolution, in 1789, was an entire disorder in society; but it was precipitated by the refusal of the clergy and nobility to contribute any share whatever of the national taxes. A timely concession on the part of these bodies to aid the declining finances, by giving up a portion of their unjust

exemptions from taxation, would probably have averted the terrible calamity which ensued.

From every revolution which has occurred, all governments may learn the valuable lesson of acting with a prudent regard to constantly changing circumstances and feelings. Without yielding to every clamour, it is their duty and interest to adapt themselves to the progressive views of mankind; graciously advancing with the intelligence of the age, and not frantically, as has been too often the case, rousing a public indignation, which perhaps may lay them in ruins. Lessons equally useful, however, may be learned by the people from revolutions. To step in the slightest degree beyond the limits of constitutional law, and assume an attitude hostile to government, is always dangerous in the extreme—treasonable if defeated, and perhaps productive of unspeakable horrors if successful. Judging from the Cromwellian and the French Revolution, besides some successful revolts of lesser note, it would appear that a revolution in general circumstances runs a certain specific course. First, the old government is overthrown, and one thought to be more liberal is established. Second, the new government being composed of men who acted from a conscientious conviction of evils to be redressed, is soon found not to go far enough in its measures; it is accused of being too moderate, and is overthrown. Third, a violent set of men, animated by feelings of vengeance, and professing boundless liberality, construct a fresh government. Fourth, anarchy sooner or later ensues, the nation is in universal disorder, and life and property are no longer secure. Fifth, out of the convulsion arises an individual, who, by his military genius, conquers inferior demagogues, and brings back a degree of tranquillity at which every one rejoices. Sixth, this tranquillity is speedily found to be a military despotism: a Cromwell or a Napoleon is at the head of affairs. And, brought to this condition, a long course of suffering is endured before the nation returns to the constitutional point whence it set out. Varied according to circumstances, such is likely to be the progress of every revolution occurring from heedless, though well-intentioned, democratic invasion. An expectation that the original movers of a revolution will be suffered to conduct it to a conclusion, is pretty nearly hopeless. The agitation brings all sorts of wild schemers into play, and one party after another is remorselessly trampled down in the contest.

On this subject, which cannot be considered with too much calmness, Alison has the following observations; he is referring to the consequences of the French Revolution:—'Upon the occurrence of a revolution, the working-classes are the first to suffer, because they have no stock to maintain themselves during a period of adversity, and being wholly dependent on the daily wages of labour, are the earliest victims of the catastrophe which has interrupted it. It is this immediate effect of a revolution, in spreading misery through the labouring poor, which in the general case renders its march irresistible, when not arrested in the outset by a firm combination of all the holders of property, and precipitates society into a series of convulsions, from which it can hardly emerge without the destruction of the existing generation. The shock given to credit, the stoppage to speculation, the contraction to expenditure, is so excessive, that the lower orders are immediately involved in distress; and the same causes which increase their discontent, and augment their disposition to revolt, disable government, by the rapid fall of the revenue, either from administering relief or exerting force. The consequence is, that fresh insurrections take place; more extravagant and levelling doctrines become popular; a lower but more energetic class rises to the head of affairs; desperate measures of finance are adopted—the public expenditure is increased, while the national income is diminished; and, after a succession of vain attempts to avoid the catastrophe, national bankruptcy takes place, and the accumulations of ages are swept off in a general public and private insolvency.' Besides an utter annihilation of private resources, the revolution in France led to the judicial murder or massacre of upwards of a million of the inhabitants; the bulk of those destroyed being of the lower and middle classes, notwithstanding that from these ranks (some of the judges had been criminals in the galleys) the tribunals and assemblies were composed. The French revolution of 1848, though less bloody, led, as is well known, to the prostration of trade, the ruin of many families, and, in general, great suffering.

Concluding Remarks.

In considering the nature and supposed influence of different forms of government, of which the preceding notices afford an example, it is important to guard ourselves against the too common error of mistaking names for things. A despotism has been described as the government of an irresponsible individual; and a republic as a government formed by the concurrence of the whole people. We should, however, be liable to commit an error, did we at once rush to the conclusion, that a despotism was invariably, and in its nature, tyrannical; and that a republic was as certain to be in every instance tolerant and commendable. It may happen that a despotism is really the most liberal and satisfactory of the two. This will occur when the despot is an intelligent and benevolent man. Instead of tormenting his subjects, he will take a pleasure in seeing them happy and prosperous; while by a sleepless and undistracted vigilance, he will conduct the government with a degree of firmness and efficiency not to be equalled by a miscellaneously-composed body. Such a beneficent government as this is said to be *paternal;* the sovereign acting as if he were the father and guardian of his people. Could it be possible to secure a continuance of sovereigns of this character, we might almost arrive at the conviction that despotisms were the best forms of government; but unfortunately there is no security on this score; an evil may follow a well-disposed ruler, and suddenly the nation may be thrown into confusion. On this account it should be the object of despotisms of the paternal character to prepare the people for the degree of self-government incidental to a constitutional monarchy; and having done so, to grant a constitution which will insure good government on a permanent basis.

That republics may be liberal and tolerant only in name, we have too many examples in history. Not to go farther back than the French Revolution of 1789–93, what despotism ever equalled, or came within many degrees of, the republican Convention, which for years oppressed and deluged France in blood! Not even the tyranny of Nero or Caligula could be compared to the disregard of all public and private rights manifested by that iniquitous and popularly-constituted body. The weak point in all republics is, that the most noisy and forward, who are usually the most ignorant, gain the ascendancy, and, under colour of constitutional privilege, tyrannise over the more quietly disposed and intelligent. This is exemplified to a considerable extent in the United States of America, and on a smaller scale in many popularly-constituted bodies in Great Britain. Among these bodies, a handful of noisy demagogues is often observed to carry measures by the mere force of clamour; and as the measures so carried are publicly announced as the doings of the whole body, it actually happens that men, under the shelter of an association, may be exempt from responsibility, and commit the most tyrannical actions. In the presbytery meetings of the Scottish church, measures are frequently carried by this means which no bishop on his own responsibility would dare to enjoin. A republican government, therefore, with all the semblance of a popular constitution, may prove far more unscrupulous than the most stern despotism ever framed. All this we mention, in order to put people on their guard against the illusions of a name. Let it be remembered that government is a complex machine, fulfilling a

wide variety of purposes, and that it is to be judged of less from the precise nature of its construction, than the quality of the work it performs. Another conclusion we arrive at is—That good government, although it certainly promotes the civilisation of a country, is much more its consequence than its cause; and that attention to the conduct and constitution of government, although a duty of the citizen, is only one of many public duties not less important and necessary both to the general wellbeing of society and the happiness of the individual.

GOVERNMENT ADMINISTRATION.

Whatever be the form of government, it requires to be conducted by a set of functionaries capable of superintending the different branches of the public service. The chief officials at the head of affairs, and who act as the cabinet council of the sovereign, are usually styled *ministers*, a word signifying servants; and collectively they are called the *ministry*. The ministry are appointed by the sovereign, and in constitutional governments take on themselves the entire responsibility of all acts of the crown. The British ministry, which is constructed on no broad principle, but merely a result of occasional additions or special circumstances, is as follows:—1. First Lord of the Treasury; 2. Lord High Chancellor; 3. Chancellor of the Exchequer; 4. Secretary of State for Foreign Affairs; 5. Secretary of State for the Colonial Department; 6. Secretary of State for the Home Department; 7. President of the Council; 8. Lord Privy Seal; 9. First Lord of the Admiralty; 10. President of the Board of Control; 11. Chancellor of the Duchy of Lancaster; 12. First Commissioner of Land Revenue; 13. Secretary at War; 14. Commander-in-Chief. Such, in general, compose the cabinet; but there are nearly twenty other ministers—as Postmaster-General; Lord Chamberlain; President of the Board of Trade, &c.; and occasionally several of these are included in the cabinet, while one or two of those above specified are excluded. There is, in short, no distinctly-settled ministry in England. The whole affair is a matter of arrangement at each change of ministry.

The Secretary of State for the Home Department may be said to stand at the head of the executive as far as the internal affairs of the country are concerned. The appointment of judges, sheriffs, and other functionaries is in his hands. Military affairs come under the jurisdiction of the Secretary at War and Commander-in-Chief. The royal navy is similarly regulated by the First Lord of the Admiralty, and other members composing his council. In the matter of the church, education, and some other things, there is no distinct ministerial management. The finances come under the cognisance and responsibility of the Chancellor of the Exchequer.

For the sake of local administration, the country is divided into counties, divisions anciently under the charge of earls or counts, but now committed to sheriffs and other officers. The *sheriff*, however, is a functionary of old standing. The title is derived from *shire* and *reeve*—the reeve of the shire. Reeve is an old title for an officer of justice inferior in rank to an alderman, and is derived from the Anglo-Saxon term *gerefa*. In Scotland, the sheriff of a county is a judge ordinary of his bounds, besides being an executor of writs issuing from the crown. Towns possessing burgal privileges are exempted from the administration of sheriffs, and are governed by town-councils, including a burgh magistracy—such councils being annually elected by the ten-pound parliamentary voters or qualified inhabitants. The chief magistrate of a town in England is entitled *Mayor*, in Scotland *Provost*. In the principal cities only the prefix *Lord* is added. In towns, and also in the rural districts, there is a miscellaneous magistracy, styled *Justices-of-peace*, who are nominated by the crown, and who possess a certain jurisdiction in civil and criminal matters.

When an administration is radiated by a gradation of offices, from the head functionaries downwards, it is said to be a *centralised government*; for everything centres in the chief authority. The British is the least central of any government in Europe, as it leaves much of the subordinate administration to authorities popularly chosen. In some respects this is advantageous, but in others it is detrimental to the general welfare; in certain towns, for example, the popularly-elected authorities are quite unqualified for their duties, and systematically oppose improvements which it ought to be their duty to encourage.

The French, with less civil liberty than the English, enjoy a system of administration the most perfect in the world; it possesses some popular elements, but is thoroughly central. The ministry, as existing under the monarchical régime, consisted of—1. The Minister of the Interior; 2. Minister of Finance; 3. Keeper of the Seals and Minister of Justice; 4. Minister of Public Instruction and Ecclesiastical Affairs; 5. Minister of Commerce and Public Works; 6. Trade and Agriculture; 7. Minister of Marine and the Colonies; 8. Minister of War; 9. Minister of Foreign Affairs. Each of these is at the head of a department which is ramified over the whole kingdom and dependencies. From the Minister of the Interior down to a justice of peace there is an exact gradation, and through the whole a channel of intelligence is kept up. The prefects and sub-prefects of departments, the mayors, &c. are all in direct communication with their great chief in Paris. In England, the Secretary of State may have no knowledge of a remote magistrate; he probably has a difficulty in discovering his name; but in France, every functionary is known to the central government, and amenable to challenge. One advantage of this is, that the most exact body of information on any local subject can be at all times procured, without resorting to the clumsy and expensive expedient of appointing commissions. In France, also, the people enjoy the great advantage of a distinct and uniform body of laws, administered by a series of courts of precisely the same nature all over the country.

Diplomacy

Is in all countries a separate branch of administration, and is that which relates to intercourse with foreign powers. The persons deputed to act as foreign ministers are of several classes. Those of the highest class, called *ambassadors*, are not merely the agents of their governments, but represent their sovereign personally, and receive honours and enjoy privileges accordingly. The second class are envoys extraordinary and ministers plenipotentiary, and *chargés d'affaires*. A third class are called residents; and next to them are consuls. Consuls, however, are confined in their duties to commercial affairs, and conduct no correspondence in relation to state policy; yet, along with the whole ambassadorial class, they are expected to succour all subjects of the power which they represent, and facilitate their journey as to passports, &c.

'Ambassadors (to quote from the 'Conversations Lexicon'), and even ministers plenipotentiary, have young gentlemen with them called *attachés*, who have no particular charge, but merely this title, to connect them with the legation, and to give them thus admission into the highest society. Sometimes they are sons of noble families, who are preparing themselves for diplomatic offices, but think it beneath their dignity to accept an appointment as secretary of legation. The suit of ambassadors always includes more individuals than the business of the embassy requires, a certain degree of pomp being considered necessary. An ambassador has generally three, always two secretaries of legation; other ministers often but one. A foreign minister receives letters of credence from his court, which, after having delivered an attested copy of it to the Secretary of State, he gives himself to the monarch, or head of the government—if he is an ambassador, in a public audience; if not, in a private audience. After the reception of the credentials, the minister is said to be acknowledged. In some countries he puts the arms

of his nation or sovereign on his mansion. After his credentials have been received, he makes formal visits to the other ambassadors, to be recognised by them as such. From the moment that a minister enters the territory of the sovereign to whom he is sent, his person is held sacred and inviolable, and he acquires important privileges. To these belongs, first of all, his freedom from territorial restrictions; that is, he is not regarded as an inhabitant of the country; but his person, suite, house, equipage, &c. are considered as never having left the country to which he belongs, and as being without the jurisdiction of that in which he actually resides. From this follows the freedom of foreign ministers from the civil and criminal law; and the same applies to their suite; and all property belonging to him as minister is free from all taxes, &c. No common police-officer, tax-gatherer, or other public servant can enter his hotel and make inquisition, as in the house of a private citizen. One of the especial privileges of ambassadors is that of worshipping according to the forms of their own religion in countries where their religion is not tolerated. A minister often voluntarily leaves a court, without being recalled, when he thinks he suffers personal injuries, contrary to the laws of nations. There are cases, however, in which a minister is compelled to leave a court, when it is termed a *removal*. In general, an embassy is considered as ended from the moment when the minister shows his letters of recall, or receives his passports for his journey home. When these are furnished him, he must leave the country; but his person remains inviolable even in case of war, and he is allowed to retire unmolested. The same inviolability of person is enjoyed in the other European states, although only in time of peace, by couriers and expresses, as also by persons who, without any public character as envoys, are intrusted by their governments with the transaction of affairs of importance, and requiring secrecy and despatch; but these are not allowed to assume the state of a minister, and, in their relations to other citizens, are regarded as private persons merely.'

Forces.

Every government employs force in the execution of its orders, or in defence of its rights. This force is in two departments, civil and military. The civil force is comprehended in constables and other functionaries usually employed in the execution of legal objects, in the maintenance of public peace, and in the enforcement of municipal regulations. Military force is quite a different thing: it is an organisation of men armed with weapons capable of inflicting wounds and death. In forces of this latter kind are included an army and a navy. Regularly-formed armies are of great antiquity. All nations, from the beginning of the world, appear to have required, or at all events used, military forces; in other words, they maintained and defended themselves by violence, and by violence they conquered each other. Hence *war*, or a period of fighting, may be said to have had an almost unbroken existence from the earliest dawn of history.

In the present day, with all its enlightenment, every civilised community less or more feels itself obliged to maintain an army. In some countries the regular or standing army is aided by an additional force, in the form of a militia or national guard, which is an armed citizenship. A regular army embraces three departments—infantry, or foot soldiers, cavalry, or horse soldiers, and artillery, or ordnance. Along with a royal navy—men fighting in ships—the cost of the military array in the United Kingdom is about £18,000,000 annually, and occupies the services of nearly 300,000 men. How far this enormous force could be reduced, consistently with the preservation of the empire in all its parts, is one of the most important questions of the day. The army is governed by rigorous laws of its own, so as to maintain high military discipline, and bring the whole body into an obedience resembling that of a machine. An army is immediately governed by a commander-in-chief, generals of division, and subordinate officers. A regiment, which may consist of 1000 men, is under the charge of a colonel and lieutenant-colonel; next in subordination is a major, a captain, a lieutenant, and ensign. Beneath are the non-commissioned officers, including sergeants and corporals. Every regiment is dressed in a particular uniform; and several of them differ also in the style and weight of their accoutrements. In taking the field against an enemy, an army almost always requires to consist of a due proportion of foot, horse, and artillery; for each assists the other. The general use of the cavalry is to dash in and cut up the parts of a regiment already broken and dismayed by the fire of artillery. The royal navy consists of vessels of various sizes and construction, equipped and commanded as already explained under MARITIME CONVEYANCE, in Volume I. In conclusion, it may be remarked that in modern warfare the object is less to kill than disperse and terrify into subjection; and therefore, among civilised nations, mercy is always shown when asked.

HERALDRY—RANKS—TITLES.

Heraldry is the science, so called, of figurative representations, designed as emblematic of rank and honourable achievements. The origin of the word *herald* is uncertain; the most plausible conjecture is, that it is from the German *heer*, an army, and *ald*, a servant—the servant or messenger of an army. This derivation would at least pretty well agree with the nature of the office of herald, which is that of messenger, or envoy, or crier, of a royal personage.

Among the nations of antiquity, it was customary for armies to be distinguished by particular standards, and warriors by emblematic devices on their shields. This was a rudimentary kind of heraldry. The cultivation of such devices, however, did not attain a settled and regular form, or rise to the dignity of a science, till the ages which succeeded to the dismemberment of the Roman Empire. Europe was now intruded on, and taken possession of, by conquering hordes, led by military chieftains. This was the commencement of the feudal system. Each leader or king gave portions of the conquered lands to his captains or nobles, on condition that they should support him in war. These nobles, again, imparted lesser shares of the lands on the like condition; and thus, down and down, the whole of society consisted of military retainers, depending ultimately on the sovereign, who was deemed the great fountain of honour, the source of all authority and distinction. In France, Germany, Italy, England, Scotland, and some other countries, the same kind of feudal tenure prevailed.

Feudal usages led to heraldry. Everywhere there was fighting. Armies required standards; and knights assumed devices emblematic of their achievements. The parties who regulated these insignia were the royal heralds; and hence the term heraldry. As heralds travelled from country to country with armies, or with the kings their masters, they gradually formed a fraternity, who took pride in fixing an exact and uniform code of emblems in reference to particular circumstances. As feudalism advanced, and became refined, so did heraldry; and it may be said to have attained its highest glories among the Anglo-Normans shortly after the Conquest.

All the devices of heraldry bear a reference to weapons of war, or arms; and as the shield was the subject of emblazonment in actual combat, so is it the chief object of heraldic illustration. A complete set of devices is called a coat of arms, which we shall describe, commencing with the shield.

A shield, in heraldry, is called an escutcheon (Lat. *scutum*), which serves as a field whereon to portray the symbolic charges or bearings. The dignity of these charges is indicated by the situation in which they are placed. As the head of a man is supposed to be more dignified than his feet, so is the upper central

part of a shield more dignified than the parts beneath. Heralds distinguish nine points in escutcheons, differing in honour. The letters in the accompanying figure show the situations of these points. A is called the middle chief; B, dexter chief; C, sinister chief; D, honour point; E, fess point; F, nombrill point; G, base point; H, dexter base; I, sinister base. These, and the greater number of heraldic terms which follow, are from the Norman-French language. *Tinctures* are the next species of distinctions. Tinctures signify the colours of shields. These colours, however, include metals and furs. Under this head is Gold called *Or;* and Silver called *Argent;* Red called *Gules;* Blue, *Azure;* Black, *Sable;* Green, *Vert;* and Purple, *Purpre;* Ermine and Vair are the furs. Each of these tinctures (in literature) is signified by a peculiar marking on the shield, or, as in the case of argent, by being left blank. A gradation of dignity from *or* down to *vair* is imported by the respective tinctures. The following escutcheons represent the distinctive markings of the principal or prime tinctures:—

Or. Argent. Gules.

Azure. Vert. Purpre.

Sable. Ermine. Vair.

Honourable Ordinaries are the next kind of markings on shields. They resemble belts drawn across, or other forms projected on the escutcheons; and are called the *chief*, the *pale*, the *bend*, the *bend sinister*, the *chevron*, the *pile*, the *cross*, and the *saltier*. We present a figure of the bend—which extends from the dexter chief to the sinister base, of the chevron, and of the cross:—

Bend. Chevron. Cross.

Next come the *partitions*. These are single lines dividing the escutcheon in a variety of ways, each, like everything else, indicative of a quality in the bearer. By these lines the escutcheon is said to be *party per pale*, *per bend*, *per fess*, *per chevron*, *per pile*, *per cross*, or *per saltier*. The annexed figure imports party per pale. A similar line horizontally across the centre indicates party per fess.

There are likewise angular lines like the teeth of a saw, and curved and notched lines, each with its distinct name, as *embattled*, *indented*, *enarched*, *engrailed*, *invected*, *wavy*, *nebuly*, *dancette*, *raguled*, *dove-tailed*, *radiant*, &c. The accompanying figure represents party per bend embattled.

Lesser or *sub-ordinaries* consist of double or triple straight lines, denominated *bendlets*, *pallets*, *bars*, and *chevronels*. Another kind of markings in the escutcheon are lozenges, chequered crossings, &c. Next we have combinations of the preceding figures, one surmounting or blended with the other. Such combinations usually refer to a union of family or national emblems. The union-jack or ensign of the United Kingdom is an example. For England it is argent, or cross gules; for Scotland, azure, or saltier argent; and for Ireland, argent, or saltier gules. Heralds describe or emblazon the combinations thus:—'Azure, the crosses saltier of St Andrew and St Patrick quarterly per saltier, counterchanged argent and gules; the latter fimbrated of the second; surmounted by the cross of St George of the Third, fimbrated as the saltier.'

The next step in heraldry is putting animals, or parts of animals, on escutcheons, in order to convey an allegorical meaning. The attitudes of the animals also form distinct significations. When a lion is rearing on its hind-legs with its face in profile, it is said to be *rampant*. If the face is turned frontways, it is denominated *guardant;* if the head be turned backwards, it is *reguardant*. When the animal is walking, it is said to be *passant;* but if the face be frontways, it is denominated *passant guardant*. The lion borne in the arms of Scotland is thus emblazoned:—'Or, a lion rampant gules;' that is, a red lion rearing on a golden shield.

'The ruddy lion rampt in gold.'

In the royal arms of England are seen 'gules, three lions passant guardant in pale.' When part of an animal is represented as cut off straight, it is said to be *couped;* if seemingly torn off, it is *erased*. When an animal is represented as standing and looking in front, it is said to be *at gaze;* if the animal is represented in its natural colour, it is described as *proper*. A stag with horns is said to be *attired*. An eagle whose wings and legs are spread out, is said to be *displayed*. Salmon represented swimming are described as *naiant*. A tree torn up by the roots is *eradicated*. Wild men, fabulous animals, hands, legs, flowers, heavenly bodies, shells, daggers, tears, castles, ships, anchors, implements of various kinds, crosses of all imaginable shapes, all form emblems in heraldry, each with its distinctive appellation and meaning.

Over the shield, in heraldry, a *mantle*, or species of drapery, in wavy folds, is usually thrown. This is a decoration, having reference to the mantle of a knight in the field of battle: the more curled and contorted that the decoration appears, so is it implied that the mantle was torn and mutilated in the strife of arms. Above the mantle is depicted the *crest*. Crests were originally cognisances worn on the top of the helmet, in order to distinguish a warrior in the confusion of a battle. Sprigs of certain plants, feathers, representations of birds, heads, and other parts of animals, &c. were used as crests. The crest of the Earls of Warwick was a muzzled and chained bear, holding a ragged staff, still well known. In heraldry, the figure forming the crest usually rests on a *wreath*, or, more properly, a portion of what originally was a wreath. Wreaths of twisted ribbon, laurel, &c. were bestowed by ladies on favourite knights, and borne by them on their helmets; hence the emblematic wreath in heraldry.

Figures of *coronets* are employed to support the crests of noble families. The coronets differ in shape and in richness of decoration, according to the quality of the bearer. The crown of a sovereign, with its arches centering in a point at the top, is well known. The coronet of a duke has a row of oak leaves in gold round the fillet or band; that of a marquis has pearls placed alternately with the leaves; that of an earl has points raised between the leaves, with pearls on the top of the points;

that of a viscount has only pearls closely set; and that of a baron has a lesser number of pearls, with wider intervals between.

It was the practice at tournaments for the pages and esquires of knights to guard their shields, and for this purpose they dressed themselves in a fantastic manner—as griffins, and other animals, &c. From this originated the custom in heraldry of giving *supporters* to escutcheons. The supporters of the royal arms of Scotland are two unicorns; those of the British royal arms are a lion and a unicorn. Supporters are borne only by royal or noble houses. Every coat of arms has a *motto* inscribed on a roll of ribbon. Mottoes originated in the war-cries of knights, also in exclamations made on particular occasions. They are for the most part in Latin or French. The motto for the British royal arms is '*Dieu et mon Droit*'—'God and my right.'

A hatchment is a species of funeral escutcheon, suspended in front of a house to mark the decease of one of its inmates. These escutcheons are always drawn up with heraldic precision, so as to indicate, by the form and accompaniments of the field and the colour of the ground of the hatchment, the sex, position, and rank of the deceased. Thus, if the death be of a male, the right side of the board is painted black; if of a female, the left—and so on.

In modern times, in England, coats of arms are granted only by the sovereign, through the agency of the Herald's College; in Scotland, by the Lord Lyon, king-at-arms, or his officers; and in either case, only on cause shown, and on payment of a fee. Latterly, the science has so much degenerated in the hands of the above functionaries, that little discrimination is exercised in dispensing either crests or escutcheons; what is worse, figures of ordinary objects are sometimes allowed to be displayed, having reference to the profession of the bearer. This is a perversion of heraldry, which is the science of emblems, not the blazonry of vulgar representations. In Britain, the use of armorial bearings in any form renders the wearer liable to a special annual taxation.

Ranks—Titles.

In Great Britain, society is composed of three estates, called the three estates of the realm—1, The sovereign; 2, The nobility or peerage; 3, The commons or people. This division, which originated under feudalism, gives a character to British manners and institutions, and admits of a considerable variety in rank and title.

To the sovereign, whether king or queen, is given the title of *Majesty*—as, His Majesty the King. This epithet is derived from the ancient Romans, by whom it was applied first to the whole people in a collective sense, and afterwards to the consuls and dictators. It was not used in modern Europe till the treaty of Cambray, 1526, when it was given to the Emperor Charles V. Since that period, it has been applied to nearly all European monarchs. By the pope, the title of *Catholic Majesty* was given to the king of Spain; *Apostolic Majesty* to the king of Hungary; *Most Christian Majesty* to the king of France; and *Most Faithful Majesty* to the king of Portugal. Previous to the adoption of the term Majesty in England, the title of *Highness*, or *His Grace*, was taken by the monarchs. To princes is now usually given the title of *Highness*, or *Royal Highness*.

The nobility consists of five degrees—dukes, marquises, earls, viscounts, and barons. The title of *duke* is from the Latin *dux*, a leader, and signifies the leader of an army. It is as ancient as the early German tribes previous to Charlemagne. Of old, dukes were set over provinces or districts to regulate the military affairs, as lieutenants of the sovereign. Under the German empire, the dignity and power of the dukes became hereditary. In England, the first hereditary duke was the Black Prince, created by his father Edward III., in 1336. The rank and title of duke have long since been disconnected with office. To dukes is now given the title of *His Grace*.

Marquis is the next lowest rank. The title of marquis, equivalent to margrave in Germany, was originally given to those officers whose duty it was to protect the frontiers or marches of the kingdom. It has long been only honorary. To marquises is given the title of *Most Noble*. *Earl* is the next degree of nobility. The title is from the old Saxon word *ethel*, or *ear-ethel*, (ge.le and noble), abbreviated to ear-el or earl. It was the duty of an earl to exercise civil, and also military jurisdiction over the district committed to his charge; and as *count* is an equivalent term for earl, the districts superintended by the earls came to be called *counties*. To an earl is given the title of *Right Honourable*, and he is addressed as *His Lordship*. *Viscounts* were the earl's deputies—*vice comes* in Latin. To a viscount is also given the title of *Right Honourable*, and he is addressed as *His Lordship*. The office of earls and viscounts has long since passed into the hands of lord lieutenants and sheriffs.

Barons occupy the lowest degree of rank among the nobility. The title of baron implies manly power, and after the Norman Conquest, was given to possessors of domains held of the sovereignty by feudal tenure: these domains were called *baronies*. A baron has the title of *Right Honourable*, and he is usually spoken of as a *Lord*. The dignity of baron or lord is now given irrespective of territorial holdings.

Among the commons of the United Kingdom are likewise degrees of rank—*baronets*, *knights*, *esquires*, and the *people* at large. The title of baronet was created by James I. in 1611; the design of the king having been to institute an inferior order of nobility. No gentleman was admitted to the rank of baronet without becoming bound to maintain 'thirty foot soldiers in Ireland for the space of three years, after the rate of eightpence sterling of money of England by the day.' It was by this assistance that James was able to effect the plantation of Ulster with English and Scotch settlers. A similar order of baronets was projected by James for Scotland, called the Nova Scotia baronets; his design being, to reclaim the province of Nova Scotia with the money they paid for the dignity. This order of baronets, however, was not instituted till 1625 by Charles I. Baronets, as in the case of the nobility, are now created at the pleasure of the sovereign, and their rank is hereditary. There are, nevertheless, differences in the terms in which these honours are held; sometimes the patent creating a nobleman or baronet confines the honours to heirs male direct, and sometimes allows their transmission to heirs in collateral branches, through heirs female. A baronet places the prefix of *sir* to his name; his wife is legally styled *Dame*, but in ordinary speech she is called *Lady*.

Knighthood was a military distinction of the middle ages, conferred only on persons of honour, truth, and fidelity. Afterwards, different degrees of knighthood were created. In the present day, knighthood is an honour bestowed on civilians or others, in compliment, as is understood, for some distinguished service in literature, arts, or arms. It is not hereditary. A knight has the prefix of *sir* to his name. The title of *esquire* was originally given to the shield-bearers of knights—young candidates for the honour of knighthood. It is now so generally assumed, as to have pretty nearly lost all value as an honourable distinctive appellation.

Master, or its contraction *Mr*, is the title given by courtesy to all persons whatsoever of an ordinary standing. Master is from the French *maître*, which is from the Latin *magister*. *Mistress* or *Mrs* is from the French *maîtresse*. *Miss*, applied to an unmarried woman, is only a contraction of mistress, which used to be applied to young unmarried women as late as the beginning of the eighteenth century.

In England, with the advancement of intelligence, we may expect a gradual disuse of titles. At present, however, they do not appear to be on the decline; and what is more remarkable, there seems to be a strong love of titles, and even of heraldic insignia, among the citizens of the North American republic. How deeply are such fancies imbedded in human nature!

HISTORY AND NATURE OF LAWS.

LAW may be defined as a system of regulations adopted in social communities for the general advantage, and on that account binding upon all the individuals constituting a community. Such regulations being absolutely essential to the existence of a social state, we may safely infer, that as soon as any portion of mankind advanced into that state, law began to exist. Its origin, being thus early, is necessarily obscure: we know extremely little of its history in any of the nations of antiquity besides Greece and Rome.

In Grecian history we find more than one well-known code of laws; but so limited and simple was their operation, and so little are they adapted to the wants of a complicated state of society, that they are to be looked upon rather as municipal regulations for the temporary government of a small knot of men, than as systems from which any additional hints are to be obtained to aid modern jurisprudence. It does not appear to have been in Greece—the source, as it was, of philosophy, literature, and art—that useful laws, applicable to the business of life, had their origin. The Phœnicians, of whose history and institutions we unfortunately know so little, seem to have been among the first to establish a general system of mercantile law, which their extensive commerce distributed abroad. To Rhodes, which can scarcely be considered a province of Greece, we owe the earliest regulations applicable to shipping. The law of average, or that by which the loss occasioned by throwing goods overboard to relieve a ship in distress is laid proportionally on the whole property saved (an important branch of the commercial code of all nations), had its origin in that state, and is still called the Rhodian law. There is the less importance, however, in the inquiry into the laws of early nations, since all of ancient law which continues to have any force in civilised Europe, has come to us through one channel—namely, the Roman law.

ROMAN LAW, AND THE SYSTEMS DERIVED FROM IT.

Most European nations, being, as it were, the remoulded wrecks of the Roman Empire, have obtained the basis of their laws from that source. The Roman law is, therefore, by the common consent of Europe, denominated *The Civil Law*. In Europe there was but one other system at an early period, to combine with it. This was *The Feudal Law*, or that code of usages which had sprung up in European nations before they received the civil law. It is, after all, only in some countries that the feudal law exists: in other cases, the civil law has established a proportionate, and in some a preponderating influence. In Holland and Germany, the original purity of the principles of the civil law have been preserved with such zealous care, that the writings of the lawyers of those countries are quoted as authorities on the law of Rome. In Spain, the system has been grafted on the feudal law, and on some peculiar customs derived from the Moors. In France, previously to the Revolution, the civil and the feudal law were united, as in most other nations of Europe; and in the Code Napoleon, to which we shall hereafter more particularly advert, there are many regulations from the jurisprudence of Rome allowed to exist, or revived, while many of the feudal customs which were formerly so prominent are abolished. England distinguished herself from the other nations of Europe by rejecting the civil law as authority, but many of her institutions were derived from its spirit and practice. 'With all its imperfections,' says Sir William Jones, 'it is a most valuable mine of judicial knowledge; it gives law at this hour to the greatest part of Europe, and though few English lawyers dare make such an acknowledgment, it is the true source of nearly all our English laws that are not of a feudal origin.' In Scotland, the Roman law has always been a special subject of study; and though the number of native decisions, the extent of statute-law, and the necessary adaptation of the system to a state of society very different from that in which Justinian promulgated his code, have rendered references to this source comparatively unfrequent, the civil law is still authority where the particular law of Scotland does not contradict it. It is a special object of study by the legal profession, and is the subject on which the members of the bar are first examined before they are admitted to practice. To complete the general outline of the influence of this system in modern Europe, it must be mentioned as the source of the canon law, which was created into a system by the Church of Rome, and still exists more or less, either separately or incorporated with other systems, in all countries where the papal authority was acknowledged. The law of nations, or international code, has been, by the common assent of civilised nations, derived from the law of Rome.

Writers have divided the legislative sources from which the laws of Rome spring into five. Among the first of these is generally classed the people, and the laws sanctioned by them are technically divided into the *Lex* or *Populiscitum*, and the *Plebiscitum*; the former including the acts of the whole people, the latter those of the plebeians convened by their tribunes. It would appear that, in the earlier periods of the monarchy, the authority of all classes was in this description of legislation tolerably equal. Servius Tullius, however, the sixth king, introduced the well-known divisions into centuries and classes, by which ninety-eight votes were secured to the first class, while ninety-five only were allotted to the remaining five, of which the lowest and most numerous possessed only one. The tribunes, who were officers chosen for the ostensible purpose of protecting the people from the tyranny of the aristocracy, were, by the exclusive and important power they possessed, again the means of restoring popular election. They procured the assembling of the people by tribes, in which their votes were given individually, and without the necessity of a property qualification. All popular legislation, however, soon disappeared with the authority of the emperors. Augustus, except in one instance, found the popular assemblies profoundly obedient, and under his successor they ceased to exist; so that long before the Roman laws had become the grand system of jurisprudence which they constituted under the auspices of Justinian, the popular source of legislation had been dried up.

The decrees of the senate (*Senatus consulta*) are another source of the Roman law. The legislative power of this body seems to have grown out of its judicial, which was at first its proper province. By the original constitution, the people alone were understood to be the makers of the laws, and their authority seems to have been gradually engrossed by the senate, the interference of which, from having been confined to mere advice and paternal assistance in legislation, gradually extended itself to that of making laws. It was not till the days of Tiberius that these decrees were publicly promulgated as laws; but the senate had by that time lost its independent authority, and become merely an instrument in the hands of the emperor. The proceedings of the senate were generally suggested by some public officer, as a minister of the crown now introduces a bill into parliament, and a majority decided for passing or rejecting. In later times it became the practice for the emperor to propose a new law, either by a message or letter laid before the senate, or by an oration delivered; and as there was no opposition intended or

permitted, the legislative body became the mere registrars of the monarch's will.

Another source of the civil law is the constitutions and rescripts of the emperors. At what time they commenced the practice of making laws without the nominal concurrence either of the senate or the people, is not very distinctly known. A passage in the Pandects, the authenticity of which, long doubted, has been confirmed by late discoveries, states that the will of the emperor is law, and that by a particular act, the people had conferred upon him all their own power, which was thenceforth absolutely to remain in his hands—one of those transactions under the guise of which rulers are so fond of concealing their lust of power, by representing as a free gift that which no one can venture to refuse. Hadrian is believed to be the first emperor who exercised the authority of a supreme legislator. The imperial laws were issued in a variety of forms. Sometimes there was a new constitution springing from the monarch's own creative mind—on another occasion he would give his imperial judgment on some nice speculative question of law dutifully submitted to his wisdom. Many of the imperial laws, however, were the decisions of the monarch in particular cases, the spirit of which was piously preserved by the lawyers of the age, as the best criterion for a general rule of action. In modern times, we associate with despotism a horror of innovation, and a desire to leave all institutions, whether expedient or hurtful, untouched. It was different in imperial Rome. The emperors were never tired of displaying the legislative produce of their own genius, or those which the prudent and courteous discoverers did not compete with them for the merit of suggesting. During four centuries, from Hadrian to Justinian, the manufacturing of legislation was in almost constant operation. Diocletian alone enacted 1200 new laws—a number that would do no discredit to a moderately long reign of a British monarch.

Edicts of the prætors are another, and not the least important source of Roman jurisprudence. Of these high magistrates there were different numbers at different times; but the supreme authority vested in two, one having jurisdiction over the city, the other over the provinces. The prætor held his office for a year; and as a provision against his adapting his judgments to his own personal views, the Cornelian law obliged him to issue a sort of proclamation at the commencement of his magistracy, embodying the general principles to which he should adhere in his judgments; and thus, at the moment when he was least acquainted with the duties of his office, he had to fix the plan on which he was to execute them. The prætor was not originally vested with legislative power—it arose in the exercise of his judicial authority. He was merely the interpreter of the laws; but when they seemed to him to be hard, or otherwise erroneous, he did not scruple to suspend or alter their execution. The prætorian law has been compared to the equity system in England—a distinct system of law, arising out of those instances in which it was necessary to give relief from the strict interpretation of the common law. The common law had fixed a particular rule; a case would arise in which its application would be very oppressive: the common law judges, bound by their system, could give no relief; but the chancellor took upon him to modify the evil, and his decision was followed in like cases. The system of the prætors was somewhat similar, with this difference, that as they had no judges to compete with who pursued a system of strict interpretation, their equity had rather a tendency to modify the common law than to raise a rival structure. 'The secret or probable wish of the dead,' says Gibbon, when illustrating the prætorian system, 'was suffered to prevail over the order of succession and the forms of testaments; and the claimant, who was excluded in the character of heir, accepted with equal pleasure from an indulgent prætor the possession of the goods of his late kinsman or benefactor. In the redress of private wrongs, compensations and fines were substituted to the obsolete rigour of the Twelve Tables; time and space were annihilated by fanciful suppositions; and the plea of youth, or fraud, or violence, annulled the obligation, or excused the performance of an inconvenient contract.' With the expiry of his year of office, the edicts of the prætor ceased to be imperative; but they were still looked up to as precedents; and when they became venerable by long use, they were considered as part of the fixed law of the land. By an enactment of the Emperor Hadrian, called the 'Perpetual Edict,' this doubtful and fluctuating branch of the law—at least as much of it as the emperor chose to sanction—received what might be called the royal assent, and was incorporated with the other portions of the civil law as a distinct branch of the system.

In almost every nation which has passed gradually from barbarism to civilisation, many laws will be found to have come into existence without the direct interference of any legislature, and from no better defined origin than a habit on the part of the people of submitting to certain rules, or obeying the commands of certain individuals: it is, indeed, generally in this manner that legislatures have originated. A considerable portion of the Roman law was of this kind: it arose in custom, was handed down by tradition and practice, and called consuetudinary law. It is a disputed question, how far it was necessary that some competent authority should certify that the principle actually was an established portion of the ancient customs of the nation, before it could be safely acted upon as law. It is a peculiarity of the civil, as distinguished from the English jurisprudence, that, according to the former, a law may be tacitly abrogated by long disuse. In England, no law, however long forgotten, ceases to exist till it be repealed by the legislature.

The last fountain of Roman jurisprudence which we shall notice, is the *Responia Prudentum*—literally, the answers of the wise men—the opinions of the sages of the law. It is difficult to conceive a state of society in which the opinions of legal writers, as to the interpretation of the law, will not have an influence. If a case occur in which the judge is uncertain as to the proper application of some enactment, where can he find a more suitable or a safer guide than in the opinion of some far-seeing lawyer, who has anticipated the case without knowing the parties, and who, consequently, cannot have proceeded on a bias to one or the other—a defect of which the judge, if he be the first to interpret the law, will be at least suspected? Even in England, where interference with the doctrines of the common law is so jealously opposed, the early commentators are the only authority for its provisions; and there is no doubt that they gave the hue of their own opinions to the doctrines they laid down. In Rome, however, where the profession of the law, instead of being a trade, conferred a high rank in society, the opinions of leading counsel had a much more extensive range. They not only interpreted, but they could create law, by suggesting how the decisions should proceed in imaginary cases. At an early period, the relation of lawyer and client was that of patron and dependant. Patricians alone could act as lawyers, and the science was involved in riddles to which they only possessed the key. The poor client was dependent on the good will of his lordly patron for such protection from oppression, whether through the law or otherwise, as the influence of the latter might enable him to afford. When population and transactions increased, and the laws, instead of a mystery, became a serious study, which depended more on laborious application than simple initiation, the profession was opened to plebeians. It became not an unusual case, at a still more advanced period, for the patron and lawyer to be separated; the former being chosen for his influence, the latter for his skill. The forms which regulated the intercourse between patron and client, however, still retained some relics of their origin; and it is a striking illustration of the influence which Roman jurisprudence has exercised over the human race, to find these still existing.

To this day, it is against all etiquette to bargain with a barrister for his work. The law gives him no claim for remuneration, which it kindly views as unworthy of the dignity of his profession; and it is usual to pay him beforehand for his legal assistance. On the other hand, though he has been paid beforehand, he cannot be compelled to perform any duty in return, for he is presumed to assist the client from his own free good will. In most other professions, it is the custom for the person employed to feel under a sort of obligation to the employer who has preferred him to others. This principle is reversed at the bar; for the person employed is the patron, and the employer the client.

But to return to the legislation of the sages of the law. During the commonwealth, whoever, by his superior sagacity or knowledge, could obtain deference for his opinions, might be said to be a manufacturer of laws. Under the earlier emperors, the privilege of promulgating authoritative opinions was confined to a limited number of lawyers, of equestrian rank, licensed by the government; but the profession was again thrown open to the public by Hadrian. The most brilliant era of legal wisdom commences within a short period of the decline of the republic, and terminates with the reign of Alexander Severus. Mucius Scævola, the tutor of Cicero, was one of its earliest ornaments; and it included the celebrated jurisconsults Paul, Ulpian, Papinian, Capito, and Labeo. The two last of these, who lived in the age of Augustus, were the founders of the two sects—the Proculians and Sabinians—into which the Roman lawyers were divided. The former advocated the doctrine that the laws should be amended at discretion, to meet circumstances as they occurred; the latter maintained the theory of their strict interpretation, be its inexpediency in the particular instance what it may. Capito, applying his doctrines to the inroads which the emperors were gradually making in the freedom of the republic, was a supporter of this species of innovation, and his followers were enrolled among the ready tools of despotism. Labeo sought to support the ancient freedom of the republic by an adherence to the letter of the old laws, and his sect became the champions of what may be termed constitutional freedom. The conflict is not unlike that which at one time existed in Britain between Lord Mansfield and Lord Camden; the former supporting, to a certain degree, an equitable, the latter, in all cases, a strict interpretation of the law.

Having now enumerated the principal sources of the Roman law, we may notice its remarkable epochs. The laws enacted during the reigns of the kings, although a curious subject of inquiry among antiquaries, exercised too little influence on the civil law, as handed down to modern Europe, to be of much practical importance. During the administration of the decemvirs, the celebrated laws of the Twelve Tables were adopted. The traditionary history connected with this code is, that the Roman government, conscious of the want of a proper legal system, sent commissioners to Greece, who, after studying the laws of that comparatively civilised nation, produced the Twelve Tables for the acceptance of the Romans. The tradition, like many others connected with the Roman history of the period, has not sufficient historical evidence to support it against its natural improbability. These laws, of which specimens are professed to be preserved, are written in a language so different from that of the classical writers of Rome, that they were to Cicero an object of much the same curiosity as the old Scottish acts were to Bacon. Like the first laws of other rude states, they are simple and brief in their enactments. The bankruptcy system—which has so sadly shocked several benevolent scholars, that they have endeavoured to explain it as a merely symbolical provision—is peculiarly sharp and effective. It enacts that the insolvent debtor shall be cut in pieces, and that his body shall be distributed among his creditors. When law became a science openly studied, the Twelve Tables became the subject of many commentaries. It was not, however, till the Romans had been for some time degenerating, that those great collections of legislative wisdom which have come down to modern times were commenced. The first attempt to construct a code seems to have been the Perpetual Edict of Hadrian, already alluded to. Two private individuals, Gregorius and Hermogenes, appear to have collected the imperial constitutions into a system, or code, of which some fragments are still preserved. Nothing whatever is known of the biography of these compilers: it has not even been discovered in what reigns they respectively lived, though their labours received high commendation at the hands of Theodosius the Younger. Under this emperor the celebrated Theodosian Code was promulgated, in the year 438. The compilation of this body of laws was committed to eight individuals, who were allowed considerable latitude in explaining and abridging, and even in supplying deficiencies. It contains the legislative acts of sixteen emperors, from the year 312 to 438. Fragments of this code have been rescued from oblivion inch by inch, by modern scholars, whose labours, it may safely be calculated, have amounted to some twenty or thirty times more than those of the original compilers. The celebrated Godefroy of Geneva spent thirty years in the task; and within the last thirty years the discovery of some further fragments induced the celebrated Angelo Mai to study the Roman law for the purpose of editing them.

We may now notice those great collections of the legal wisdom of the Romans, to which the above may be considered only preparatory. In 529, ten commissioners, appointed by Justinian, prepared *The Code* or *Codex*, as it is termed, from the collections previously made, and the intermediate enactments. Soon after its promulgation, the emperor issued several new constitutions, and the whole were consolidated and reissued in 534. This great task was superintended by the celebrated Tribonian, whose eminent learning and discrimination, allied with untiring industry, but stained by the vices of corruption and partiality, have afforded a fruitful theme of praise and obloquy. This was by no means Tribonian's only labour. In the year 530, he was appointed the chief of a commission of sixteen, whose duty it was to cull the choice and useful passages from the authors of comments and opinions. The various authorities, which, we are told, would have made several camels' loads, were thus reduced within a compass which, if it do look somewhat formidable to the consulter, is still manageable. Such are the fifty books which constitute the celebrated 'Pandects,' or 'Digest' of the Roman law—a work without which modern Europe would have known but little of the subject. Along with Theophilus and Dorotheus, the indefatigable commissioner was able to prepare, in conjunction with this great digest of the law, an abridgment or manual of its leading principles, which bears the well-known name of 'The Institute.' This condensed and elegant little work was sanctioned by the emperor in 533. It has become the subject of innumerable comments, and has afforded the model on which the legal writers of most modern nations have desired to prepare their treatises. Justinian continued, during the remainder of his life, to promulgate new laws; and these, collected together under the title of '*Novellæ*,' or 'Novels,' form the remaining department of the '*corpus juris*,' or body of the civil law.

With Justinian we reach the climax of the Roman law; and to trace its farther progress in the Empire has been more a subject of curiosity to the antiquary than of importance to the lawyer. Some fragments by later commentators, chiefly in the Greek language, have been disentombed by zealous searchers. The Roman law was nominally respected by the northern conquerors of Rome. Alaric, king of the Visigoths, indeed, caused a compendium to be prepared for the use of his dominions, consisting chiefly of an abridgment of the codes of Gregorius, Hermogenes, and Theodosius. Towards the end of the ninth century, Basilius, emperor of the East, issued a new code, intended to supersede the labours of Tribonian, termed the '*Basilica*.'

In the dark ages, however much of the Roman law may have remained in practice, it had died away in literature, and was neither studied nor commented on. At the taking of Constantinople in the fifteenth century, only one copy of one of the Justinian labours, *the Novels*, seems to have been discovered. It was long believed, indeed, in the learned world, that from the period of the Basilica to the twelfth century, the very existence of the Roman law was among the things forgotten. The circumstances of its resuscitation were found in a traditional anecdote, that at the siege of Amalphi in 1137, some Pisan peasants discovered a complete copy of the Pandects among the plunder, the melodious language, comprehensive philosophy, and clear definitions of which, so charmed the readers of that barbarous age, that its contents were immediately devoured with avidity and propagated with zeal. In Florence, a manuscript [illegible] preserved, said to be the identical book with [illegible] anecdote is connected, taken at the siege of P[illegible] 1406. The essence of the tradition has been dispr[illegible]d by late discoveries, which show that the civil law was known previously to the siege of Amalphi.

The real revival of the civil law is to be traced in the history of the universities. Of these, Paris, Bologna, and Leyden, took the lead in the department of jurisprudence. Contemporary with, or immediately after the siege of Amalphi, lectures were given on the Pandects in the university of Oxford, by a teacher of the name of Vacarius. For reasons which we shall have to state when we come to treat of the laws of England, the civil law, thus early commenced, never made much progress in England. Nor, although the civil law was so prominent a subject of profes[illegible]nal study in Scotland, has that part of the empire done much to elucidate the science. Both England and Scotland, indeed, have produced writers on the civil law; but with one or two exceptions, the British jurists are not among those names which become familiar to the readers on the subject, from the frequent reference made to them by subsequent commentators. The earlier modern civilians followed three oracles—Bartolus, Baldus, and Accursius, whose works, it is believed, the most enthusiastic admirer of the study would not now peruse, and who probably retain their chief celebrity from having been targets for the wit of Rabelais. In the seventeenth century, more elegant and philosophical commentators followed, and the subject was pursued with zeal to the middle of the following century. A prodigious number of civil law books issued from the press during that period; and we have heard it asserted, that a complete collection of all the books published on the civil and canon law would make a library of two hundred thousand volumes. The labours of Godefroy alone are sufficient to damp the ardour of a modern literary collector; and there is perhaps no surer mode of comprehending what human patience and perseverance is capable of, than the contemplation of a civil law library. Holland has been profuse with great authorities—Grotius, Matthæus, Schulting, Noodt, Voet, and Huber, belonged to that country. Germany produced the philosophic jurist Puffendorf, and Heineccius, whose elementary works—as the clearest and most methodical of the commentaries—have been popular as class-books of civil law. Among modern investigators in this laborious science, the Germans have taken the lead.

To give a general outline of the Roman law, would be to describe the common principles of the majority of the codes of civilised mankind. Although the progress of commerce and manufactures has introduced a quantity of transactions—such, for instance, as bills of exchange—which the Roman lawgivers could never have contemplated, yet their system is the foundation of all the commercial laws of Europe—a circumstance which has probably facilitated the uniformity so necessary in transactions which involve inhabitants of different countries. From the same source, Scotland and the greater part of continental Europe have derived a marriage law so different from the ceremonious system that prevails in England. Its leading principle is, that the consent of the parties alone is necessary to a valid marriage, and that when that is proved, nothing more is necessary; and that a child born between parties who are subsequently married, becomes legitimate by that act. The law of trusts and of the mutual rights and obligations of guardian and ward, have found their way more or less into every modern system, and even into the statute-law of England. Prescription, or the principle that claims are limited by the lapse of time, has come down to us from the Romans. The law of testaments, and the descent of movable property, is mainly derived from the same quarter. It is in the case of the tenure and transmission of land, indeed, that the person versed in modern systems will find himself least at home in the Roman, from the effect which the feudal institutions of the various nations of Europe have produced on that branch of the law. The subjection in which children were placed to their parents is apt to create surprise, even when compared with the strict filial etiquette of our own ancestors. A revolting feature of the *corpus juris* is the portion of legislation devoted to the subject of slavery and the property in slaves.

The Roman law has already been mentioned as the source of the law of nations, or, as it is more justly called, the *international law*, in modern Europe. It was quite natural that a system voluntarily adopted among nations for regulating their mutual intercourse, should be founded, to as great an extent as might be expedient, on the system of the internal laws which the majority of the nations had chosen to adopt. But the law of nations is perpetually varying with circumstances, and it is impossible to draw that distinct view of its nature and provisions which may be given of the laws of any particular state. It has been argued, indeed, that the term 'law' is improperly applied to the system. Wherever the term law is used, there is understood not only a regulation laid down, but a means of enforcing it in the hands of a superior power. The civil and criminal laws are enforced by the ordinary courts; the military law, by courts martial; the law of the church, by the ecclesiastical courts, &c. But who, it is said, is to be the judge to enforce the law between nations? When two nations have a disput[illegible] and their power is equal, it remains undecided; if the one is much superior in strength to the other, it has matters its own way. In the late war, Great Britain maintained that she had a right to search all neutral vessels, for the purpose of ascertaining if they contained contraband goods or sheltered deserters. The smaller states were bound to submit; but America resisted, and the dispute occasioned a bloody war. So it probably will be again when the same claim is urged. Instead of being a fixed law applicable to all, the weak will have to obey, and the strong will resist. For the enforcement of any rules that may be called the law of nations, then, it is clear that there is no better sanction than this, that the powers which openly outrage them will call forth a degree of indignation on the part of the rest of the world which may prove dangerous. The partition of Poland, for instance, called forth the indignation of the rest of Europe; and it may be still a question whether the acquisition was a prudent one to the nations concerned. It is not to be supposed, however, that there are no courts where the law of nations is enforced. Each country in Europe has generally a court where its own views on the subject are laid down. England has, for instance, the prize jurisdiction of the Court of Admiralty, which is thus called a civil law court. During the late war, when Napoleon, by his Berlin decrees, declared Great Britain and her colonies in a state of blockade, and Britain retaliated by the orders in council on the rest of Europe, a multitude of cases where the ships of neutral powers had been seized for breach of neutrality were adjudged. And here a circumstance occurred which could not take place probably in any other country, that the view taken of the

law of nations by the judge was different from that taken by his government; for Lord Stowell declared that a blockade could not be held to exist by mere proclamation, but that there must be present on the spot an armament sufficient to enforce it.

One of the principal defects of the writings in the civil law, and one that renders the subject in a great measure unpopular at the present day, is the spirit of speculation with which they are imbued, and the extent to which they carry divisions and arrangements which are of no service in practice, and provide for wants purely hypothetical. The civilian in his study, shut out from the world, and ignorant of its pursuits, sets his brain at work to create the various exigencies of practical life to which the maxims of the institute were applicable, and to devise how they could be applied; but when his labours were brought to the light of day, it was found that the world in its practice, and he in his thoughts, had taken totally different routes, and that the one could not be the companion of the other. If a tailor make clothes with another man's cloth, to which of the two shall they belong? If an artist paint on another man's canvas, who shall be the proprietor of the picture? Such were among the subtleties discussed among the Roman jurists. In later days, when legislators have too much to do in keeping up with the practical demands of society to indulge in hypothetical law-making, such subjects would not be taken up until cases of difficulty actually occurred; and then, before deciding the abstract questions, it would probably be asked under what circumstances tailors are likely to make garments out of cloth which does not belong to them, or artists to paint on other people's canvas?

THE CANON LAW.

The Canon Law is, properly speaking, the eccl[illegible]tical law of the Roman Catholic Church. In its [illegible]limited acceptation, it may be called the by-laws of the church as a separate corporation; but its field widened with the influence of the hierarchy. It embraced many subjects of pure civil and municipal law, such as the distribution of property between married persons, succession, &c., by linking them with ecclesiastical matters; and thus the clerical tribunals came to rival, if not to excel in importance, those of the state. The canons of the Greek Church, a portion of which were said to be the work of the apostles, added to and explained by general councils, were sanctioned by the Novels of Justinian, and have so been viewed as a portion of the body of civil law. A collection of canons was made in the year 520; and this work, with the papal decrees, and the privileges conceded to the church by Charlemagne, formed the chief subject-matter of the canon law down to the twelfth century. It was then that this law ceased to be the mere regulations of a peculiar body, and became a general system of jurisprudence. About the year 1114, a collection of the decrees of popes and cardinals was commenced by Ivo, Bishop of Chartres, and was revised and completed in 1149 by Gratian, a Benedictine monk. Another element in the system consisted of the Decretals, which were rescripts or epistles by the pope, or by the pope and cardinals, deciding how the law of the church stood concerning disputed matters referred to them. These were first collected and edited in 1234 by Raimond de Renafort, chaplain to Gregory IX. This work was divided into five books, to which a sixth was added under the auspices of Boniface VIII. in 1298. These two great works, with some additions made to them by succeeding popes, formed what, in imitation of the collected works in the law of Rome, was called the *Corpus Juris Canonici*, or Body of the Canon Law. Besides these general statutes, there were local canon laws passed by the clergy of various countries, at national or provincial assemblies, held under the auspices of papal legates or archbishops. In the reign of Henry III. there were assemblies of the former kind; and under the respective archbishops of England there were frequent provincial synods. In Scotland, two provincial synods, held at Perth in 1242 and 1269, passed some important laws regarding tithes.

The great aim of ecclesiastical legislation was to bring civil questions within its pale. Disputes as to tithe and the privileges of the clergy came very naturally to its hand. The priesthood were in a great measure intrusted with the administration of legacies, especially where they were destined to pious uses; and they thus acquired a jurisdiction in questions of succession, of which we see vestiges in this country in the Court of Arches and the other ecclesiastical courts of England, and the commissary system in Scotland. Marriage being constituted a sacrament, the canon law not only took into its hands all questions regarding the union and separation of the parties, but adjudged in the criminal act out of which the latter circumstance might arise, and took under its cognisance questions as to dower. The church obtained a powerful hold over the proceedings of ordinary courts of law, by the introduction of the practice of witnesses and parties calling God to attest the truth of their statements—the origin of the present system of administering an oath. Over this ceremony, and all matters connected with the truth or falsehood of the statement it sanctioned, the clergy took a particular charge. Notaries, who, in the days of ignorance, were intrusted with the execution and registration of contracts—who, in fact, were the living registers of almost all transactions of importance, were necessarily taken from the only class who could write—the churchmen—and their appointment and removal naturally fell into ecclesiastical hands.

A great rivalry thus existed between the civil and the canon law; but it was a friendly rivalry. The clergy were the repositaries of both systems, and they had to decide how much should be assigned to the one and how much to the other. The canon law borrowed largely from the civil, of which it is sometimes considered a mere branch; it was naturally, indeed, the object of the clergy not so much to change the law itself, as to take the administration of it into their own hands. To be *juris utriusque doctor*, or doctor of either law, civil and canon, was a common distinction. During Henry VIII.'s reign, lectures on the canon law were abolished in England, and with them the corresponding degree. Jealous as the English were of the encroachments of the civil law, they still more determinedly opposed that of the canon. What the powerful court of Rome had set its heart upon, however, could not be wholly resisted; but it was always a principle, that though the civil authorities of England might take laws from the ecclesiastical system, the canon law was never, in its own simple authority, to be obeyed within the realm.

THE FEUDAL LAW.

The feudal system and the Roman law may be said to have struggled for supremacy through nearly the whole of modern Europe. Of the influence of the latter we have already taken a cursory view. The former was an ingredient in the constitution of the continental and British monarchies. It was the source of those popular or aristocratic assemblies which shared more or less, according to circumstances, the government of the various states in which they existed; and it was thus the ostensible origin of the British parliament. The constitution of the German empire is essentially feudal; and the customs, or peculiar local laws of the various provinces of France, previously to the Revolution, were models from which the system was studied. The English law, especially that of real or landed property, is full of feudal usages, though their operation has often been checked. In Scotland, the forms of the feudal system may be found existing in almost original purity, though, as we shall hereafter see, they have been adapted, perhaps as far as they are capable of being so, to the wants of civilised times.

An account of the rise and progress of the Roman law must, for obvious reasons, be far more satisfactory than any that can be given of the feudal system. The

former was (at least the greater part of it) the construction of ingenious individuals, possessed of authority to enforce their mandates on their fellow-beings. The latter gradually rose out of circumstances and the state of society. It was not devised by a powerful legislator, to be promulgated to a willing people; but it rose out of habits and events which took place in an age when there were no historians to record their progress. Hence the origin of the feudal system has been a fruitful subject of debate and theory; and in the absence of facts, it has often been necessary to resort to moral deductions. It has been maintained by some that nothing can be more simple than the feudal system; that it was a mere arrangement by which military service was given in exchange for land, and that many half-civilised nations present instances of a similar contract. Ingenious speculators have found the resemblance of the system in particular stages of the history of Greece and Rome, in Turkey, Persia, Hindoostan, and the Highlands of Scotland, among the aborigines of North America, and in the Loo-choo Islands. But however important may be the investigation of such analogies between the practice of mankind under different circumstances, as a part of the history of the human mind, they throw but little light on the feudal system, the chief interest of which is to be found in the vastness of the field which it covered, and the influence which it has exercised for so many centuries over the legal institutions of Europe.

The essential elements of the feudal system were land, and military service given for the use of it, by the vassal who held it, to the superior of whom it was held. It would be wrong to speak of either of these two parties as the absolute proprietor of the lands; for in the more perfect stage of the system, each had his own peculiar privileges, with which the other had no right to interfere, except where the law permitted him. The vassal was not, in the general case, the slave of the superior. The duties and services he had to perform were regulated by compact or custom. On the other hand, however, he was not the independent proprietor of the lands he held. He could not convey them to a purchaser, nor could he pledge or bequeath them, without obtaining the sanction of the superior to the person to be substituted to him. Land was thus completely removed from the operation of commerce; and in those countries where the feudal system continued to exist, it was only by fictions and connivances—by bribing the superior, or getting the courts of law to compel him to give his consent—that sales and pledges could be effected. The lands held in this manner were termed *fiefs*. When they became hereditary, as they did apparently by custom, arising from the tacit consent of the parties interested, the superior was still presumed to give an assent to the change from father to son; and before he acknowledged the latter as his vassal, he exacted from him a fine. When the successor was a minor, and thence unable to fulfil the military duties of the fief, the superior in some cases became his guardian, drawing the rents of the estate, and compelling him to marry whom he should point out, under a penalty which, it would seem, ought to amount to the sum which the guardian, or superior, could receive by selling the alliance. The superior's claim upon the estate during the vassal's minority became, like most other feudal exactions, fixed by usage, and seems in general to have amounted to one year's rent of the land. In some countries females could not succeed. In others, where their right was acknowledged, the superior claimed the privilege of assigning husbands to them; and exacted a fine, sometimes for admitting the husband as a new vassal, sometimes as the price for permitting him to marry his ward. The feudal system, like every other, had its degrees of goodness and badness. Where we find the milder features of the feudal law, the right of the lord over his female vassals, or the wives and children of his followers, was a mere tax; but where the darker influences of the system were at work, it gave legality to a licentious despotism, which is frequently adduced as a disgusting memorial of the barbarism of feudality. Of illustrations of despotism, indeed, the feudal system is full. Independently of its own peculiarities, it would have been impossible for any legal system to have passed through the scenes of rapine, blood, and barbarism which characterised the middle ages of Europe, without being the instrument of many iniquities. At the outbreak of the French Revolution, which at first was little more than an attack on the most offensive relics of feudalism in France, some of these horrors were dragged from their dingy retreat in parchment records and black-letter chronicles, to add to the frenzy of the times. Among other instances, was adduced that of a feudal lord, on his return from the chase in winter, disembowelling a vassal, that he might keep his feet warm in the reeking trunk during the evening revel.

The proper return of the vassal for his lands and the protection of his lord was, as already stated, military service. Where this system was established as a fixed law, the quantity of service to be so given was regulated. A knight's fee imposed on the holder the duty of being forty days in the field for his superior, and the half or quarter of a knight's fee involved corresponding proportions of service. When fiefs came first into existence, it is probable that there was no other service worth possessing but the use of the strong arm. Conquered land was what the chief possessed, men to fight more battles was what he wanted; so that the one became the price of the other. It was not always the case, however, that land was valuable for nothing but as the reward of fighting, and it was gradually bestowed for other considerations; yet so closely connected had the relation of a military tenure become with land, that any other method of disposal was considered as irregular, and merely exceptional. Hence, when land was given without a price, and for the understood return of military service, it was said to be a proper feu; when any other consideration, such as a sum of money, was stipulated for, it was said to be improper. The former was always presumed to be the condition on which land was given, the latter required to be specially proved, and the unwillingness to admit it called for those legal subtleties which have made the commerce inland to this day so complicated. It behoved that there should be possessors of land who were not of necessity soldiers, and it was necessary to the monarch, or feudal superior, to employ people in various other capacities. All, however, took the impression and stamp, as it were, of fiefs. Salaries, taxes, honours, and dignities, even board and lodging, were feued out: the person who had engaged to bestow them acted the part of superior, and he who received them that of vassal. The church enjoyed lands which were not exempt from the ordinary feudal services. In the earlier ages, churchmen in many cases themselves assumed the spear and buckler. When it was considered inconsistent for churchmen to fight, it was held as by no means unsuitable for the church to employ soldiers. A clerical establishment would sometimes appoint a patron, or chivalrous assistant, in the person of a neighbouring baron, who would be called the 'advocate' of the establishment—the use, by the way, to which that word, which now designates a class of peaceful lawyers, was first applied. It is not unfrequent to find in old tenures that a particular monastery is to supply so many archers and spearmen for so many days.

Borough communities were another class to whom military service seems inapplicable, but who nevertheless almost universally held by that tenure. They obtained certain privileges, and in return they had generally to keep watch and ward in their respective towns; a service in which their own safety might not be less interested than the ambition of their lord. As the privileges conceded to these communities were large and important, they did not, in general, escape taxation along with their military duties; and in later times, these exactions became generally commuted for a money payment. The privileges usually conceded to these

commercial communities consisted of an exemption from the more vexatious of the feudal exactions, to be shortly noticed. These were generally conceded to them by the monarchs, as a counterpoise to the growing power of the feudal aristocracy; and within these sanctuaries commerce and civilisation created a power, by which both kings and nobility were effectually held in check.

Among those who were placed in the position of feudal vassals to the seignior, or lord, were his own domestic servants, whose power and influence would be, to a certain extent, measured by that of their master. To perform the menial duties of his household, a Roman emperor employed a slave, just as a senator or a proconsul might do. The barbarian conquerors, however, gave lands to those who performed these functions; and the person who performed for Charlemagne the office of butler, valet, huntsman, or groom, got for his services the commodity most readily at his master's hands—portions of conquered territory. The services were thus performed as the consideration for feudal benefices. The menial servant of the monarch might have tenants and retainers under him; and thus the wages ennobled the functions. Hence we have had in modern Europe masters of the robes, grooms of the stole, masters of the buckhounds, masters of the horse, &c. held by the highest nobility of the realm. The *graf*, or land-steward of a district, was an important personage. Instead of attending to the letting of paddocks, and the rotation of crops, he was intrusted with the power of life and death over the inhabitants. The humble grieve, who has the management of a small landed estate in Scotland, and the shire-rieve, or sheriff, who performs high judicial functions in the same part of the empire, have divided, as it were, between them the original duties of the feudal officer from whom their names are derived. The same feudal origin may be as distinctly traced, on a larger scale, in the relation of master and servant in modern times. Servitude, however menial, when allied with feudal dependence, did not carry the same degradation as mere slavery; and in the opinion of some, the situation of the feudal attendant was higher than that of the menial servant of modern days, who freely gives his labour and attendance for a price. In Scotland, where feudal usages have lingered so long, it has been remarked that the relation between master and servant is of a more confidential nature than it is found to be in other parts of the country. While the line drawn between their positions is as clear as it can well be in a free country, the situation of the servant has a more than ordinary share of respectability attached to it, because, instead of being the individual servant of an individual master, he and his race are looked upon, to a certain extent, as the retainers of the house which he serves. On this point, indeed, an adherence to feudal usages in situations to which they are not applicable, has been productive of one of the greatest evils of modern society—the extent to which servants are kept, not for use, but as an ornamental evidence of wealth. Our lineal aristocracy continue to follow, so far as the usages of the day permit, the practice of their ancestors; and the gentlemen of plush and shoulder-knots are the representatives of those who wore buff jerkins, and handled the pike. The rich merchant and manufacturer must not be without the usual insignia of wealth; and thus a race, whom idleness and constant association with each other must deprave, are kept up among a bustling and active community, as if we lived in the days when the majority must either serve or starve. It has been remarked, that in republics such as Holland was, the wealth of rich individuals generally took the more ennobling direction of patronising the fine arts and literature.

In the earlier ages of the feudal system, when there was much land to distribute, the natural features and boundaries were sometimes little known to those who gave it away. The persons who received it were aggrandising and ambitious, and not likely to yield to each other disputed portions. Above all, the conquerors were uneducated, and had little means of giving perpetuity to their bounty by written deeds. From all these circumstances, the investiture of the vassal became a very important and solemn affair. Investiture was divided into proper and improper. By the former, the superior went in person to the land, assembled all his other vassals upon it, and showed them the portion he had assigned to his new follower. The vassal, upon this, did homage, accepting the grant, and promising to perform the usual services in return. By the improper investiture, of the full practice of which in our own day we shall give an instance, the superior gave authority to his bailiff, or some other person, to give investiture, which was done by the symbolical delivery of a portion of the property—some earth and a piece of stone generally—to the vassal, or some person authorised by him to accept the grant and perform his homage. Writing was probably in use before this latter usage was commenced, and the authority was generally a written one. The solemn investiture in presence of the co-vassals finally descended to a mummery between an attorney and his clerks. The necessity to have acts regarding the fiefs of a superior witnessed by his vassals, can be traced to a connection with two of the most important institutions of modern times. The great vassals of a king, met together in public assembly to discuss what aids they might afford for their fiefs, how they were to defend them, &c. merged into a great council or legislature; and it is to such a body that the British parliament at least partly owes its origin. At this moment, the bishops of England sit in the House of Lords in virtue of the feudal baronies which they hold of the crown. Vassals of the lower grade were often summoned to attend at the hall of their lord as assessors, or assizers, to give, partly opinion, partly evidence, concerning some matter connected with the fief, or the conduct or rights of a fellow-vassal. With this institution, the system of trial by jury is intimately connected. A jury of perambulation, for the purpose of ascertaining boundaries—a sort of body lineally descended from the assemblage of co-vassals who were present at the investiture, and witnessed the extent of the gift—has been known in modern times.

It is probable, that if the feudal system had only established a relation between the monarch and his immediate vassals, the influence it would have exercised over the state of Europe would have been comparatively slight. The distribution of land as the reward of services, is frequently exemplified in history; but that which chiefly distinguished the feudal system, is the numerous grades of dependence, and the manner in which all parts of society, from the emperor to the lowest serf, were bound together in one system of lord and vassal. In the first place, there were various grades of vassals holding of the monarch. The majority of the lower classes, however, generally found themselves under the protection of some intermediate chief. The duke, or count, who held immediately of the crown, sub-feued to a dependant, who, on his part, might dispose of a fragment in a similar manner. By such an alienation, however, the vassal dared not in anyway interfere with his superior's rights; the latter, indeed, was not presumed to be conscious of the sub-infeudation, unless he had specially sanctioned it, and by doing so, he acknowledged the sub-vassal as his own immediate retainer. When a vassal, therefore, sub-feued without his superior's consent, he gave only a portion of the estate he himself possessed, his sub-vassal being liable to meet all the exactions that might fall upon him. So, if he rebelled against his lord, or withheld the feudal exactions, the superior could seize upon the fief without reference to the claims of the sub-vassal. The highest feudal noble was the Heretoch, who, from the Latin *dux*, a leader, received the designation of duke: this class was intrusted with the administration of large provinces. The graf, who had a smaller charge, was called *comes*, or count; and one class of graf, who was intrusted with the marches, was called the *mar-grave*, *march-graf*, or marquis. These nobles generally held lands of their sovereign, while

they were authorised to represent his person over the districts to which they were assigned, administering justice in his name, levying his feudal exactions on his vassals, and receiving their homage. These powerful feudatories were held in check by Charlemagne; but under his successors, and the other European monarchs, it became their aim to be the independent sovereigns of the territories committed to their charge—an object in which they were more or less successful according to circumstances, some throwing off their master's yoke, while others made themselves intermediate superiors between the king and his vassals. The various states of Italy and Germany are illustrations of the working of these events. The feudatories of France made a very near approach to independent sovereignties. They possessed within their own dominions the right of coining money, that of waging private war, exemption from all tributes, except the limited feudal duties by which they acknowledged the superiority of the crown, and finally, freedom from legislative and judicial control on the part of the sovereign and his courts. The vassal, too, in looking after his own concerns, sometimes conquered territories not inferior to those of his lord; and under such circumstances there was little chance of his being an obedient retainer. The Duke of Normandy, the vassal of the king of France, became monarch of England, and the Dukes of Burgundy were little less powerful.

From these high personages, vassalage went through many gradations, till it reached abject slavery. There were the *vavassors* and *châtelains*, dependants on the higher nobility, but who themselves had large estates and fortified their houses. There were the burghers of free towns, whose privileges have been already mentioned. Of rank corresponding in the rural districts, were the *socage-holders*, and the class so well known in England by the designation *yeomen*. The lowest grade were the *villeins* or *serfs*, to whom was committed the task of tilling the lands which the soldier gained or protected. It was the characteristic of the other grades of feudality to impose duties upon the lord, corresponding to those of the vassal, but the villein had little power to exact performance of these regulations. There were grades, however, even among the serfs, though probably there were not instances in which one held of another as vassal and superior. The peculiarity of the class was, that they were astricted to the domain, and went with it when it changed hands. Some, however, had rights and privileges which they might maintain in the court of the manor of their lord. Some held small estates, which, however, they could not dispose of. The lowest class were as abject and unprivileged as the slaves of the Romans.

The different classes of feudal taxes have been mentioned above. There were others, however, of a more miscellaneous nature, which were chiefly encroachments on the purer spirit of feudality, dictated by despotism and cupidity. It was upon the vassals who approached nearest to the state of villeinage that these innovations naturally fell most heavily. They were designated 'aids,' and were demanded by the lord on any occasion which caused him outlay. If he had to make war with a neighbour, or to portion off a relation in marriage, or to ransom a son, he demanded an aid. Aids were profusely exacted by the knights who joined in the Crusades. In England, the aids that might be exacted, were restricted by *Magna Charta* to three: they were for the purpose of making the lord's eldest son a knight, for marrying his eldest daughter, and for redeeming his person from prison. By exactions in a different form, the more servile vassals were fleeced and kept in subjection. The superior, if he built a mill, astricted all his vassals to grind their grain at it, compelling them to pay a tax for the service they were forced to receive. He compelled them to assist in making roads and building bridges, and he exacted tolls of all below the degree of freeholders who crossed them—a system which placed impediments in the way of vassals escaping from place to place. He obtained tolls and duties, too, on the export and import of commodities; and if he found a clever artisan on his premises, he would keep him and his services for his own use.

The revival of literature was not favourable to pure feudalism. It brought with it the study of the civil and canon laws, and it was through the lights so acquired that the feudal customs were interpreted. The decline of the spirit of the feudal law is matter of history, and a view of it would lead to too long a digression. Not only its effects upon society, but its literal forms, still linger amongst us; even in republican America there is pride and boast of birth, and a knowledge of the feudal system is sometimes requisite in ascertaining the title to property.

THE LAW OF ENGLAND.

England has already been mentioned as an exception to the general prevalence in Europe of the civil and canon laws; not that these systems were totally repulsed, but that they met with a countervailing resistance, which prevented them from obtaining the influence they possessed in other countries. This resistance may be found in the existence of a different, and, it may perhaps be said, hostile system, called the common law, and to the power of parliament to make laws or statutes. The three great elements of the jurisprudence of England are the common law, the law of equity, and the statute law. To these may be added, as codes limited to particular spheres, the Admiralty law and the ecclesiastical law.

Common Law.

Speaking of the common law, Sir Matthew Hale, its historian, says: 'This is that law by which proceedings and determinations in the king's ordinary courts of justice are directed and guided. This directs the course of descents of lands, and the kinds, the natures, and the extents and qualifications of estates; therein, also, the manner, forms, ceremonies, and solemnities of transferring estates from one to another; the rules of settling, acquiring, and transferring of properties; the forms, solemnities, and obligations of contracts; the rules and directions for the exposition of wills, deeds, and acts of parliament; the process, proceedings, judgments, and executions of the king's ordinary courts of justice; the limits, bounds, and extent of courts, and their jurisdictions; the several kind of temporal offences and punishments at common law, and the manner of the application of the several kinds of punishments; and infinite more particulars, which extend themselves as large as the many exigencies in the distribution of the king's ordinary justice require.'

The origin of this system—one of the most interesting subjects of modern investigation—is involved in deep obscurity. Its progress subsequently to the reign of Edward I., who has been called the English Justinian, is pretty accurately noticed; but when an unprofessional inquirer reads those portions of English law-books which attempt to carry the history to an earlier period, he cannot help feeling disappointed at the unsatisfactory result. The more marked features of the system were, doubtless, the customs of the Anglo-Saxons. A collection of the laws of England during the heptarchy, or laws of the Anglo-Saxons, was published by an eminent antiquary at the commencement of the eighteenth century; but there is great reason to believe that they were written some centuries after the Conquest; while the fragments of Anglo-Saxon legislation which they contain refer chiefly to the arrangement of the military force, the clergy, and other matters of general or police regulation, which, in the present instance, are less interesting than a little insight into the laws relating to private rights would be. Alfred and Edgar have acquired much fame for having collected and arranged the laws of their predecessors, reformed them where they were impolitic, and completed them where deficient; but it would be difficult to determine their exact merits. Edward the Confessor enjoys a similar reputation. To

him, indeed, history supplies us with good ground for referring equitable laws, for we find that when the people complained against the oppression of the Norman kings, they demanded 'the good old laws of Edward the Confessor.' It is probable, however, that the compliment did not apply to him so much in the capacity of a legislator as that of the last of the Saxon kings.

Whatever may have been the exact nature of the laws of the Anglo-Saxons, the Conquest effectually incorporated them with the feudal system, and the connection between vassal and superior became one of the most important features of the common law. It is not to be supposed, however, that this was the earliest visit of feudal institutions to Britain. The Saxons could not well escape the influence of a system which had deeply rooted itself among the kindred nations of the continent; and many feudal institutions are to be found existing under the Saxon kings. The increase of the spirit of feudalism under the sway of William the Conqueror was, however, so great, that many authors have attributed its origin in England to the era of the Conquest. It was then, indeed, that it became oppressive. The conqueror brought with him the system of his own province, for which he was a vassal to the king of France, and could not admit the possession of landed property in England, except as held from himself in the capacity of lord paramount. The greater nobles—chiefly the Conqueror's companions in arms—naturally held the lands he liberally bestowed on them of him as superior, and they compelled all who lived upon their lands, or even in their neighbourhood, to acknowledge them as liege lords. The forcible increase of such a system as the feudal law could not but be attended with acts of great oppression. These were added to by the selfish magnificence of the princes, who cleared large tracts of country of inhabitants, that they might enjoy the regal pleasures of the chase in undisturbed tranquillity. The Saxons had their own county courts, but the greater part of the causes were, after the Conquest, removed from them to be pleaded in the court of the monarch, which attended on his own person. Legal proceedings were conducted in the Norman dialect of the French, which was afterwards changed into Latin. The use of a tongue unknown to the people at large continued down to the days of Oliver Cromwell, and at the Restoration was restored, with some other absurd practices. It was abolished in as far as respects the proceedings of the courts in 1730.

The charters that were so often granted by the earlier kings to the importunity of their subjects, were partially restrictions of the tyranny of the feudal law, and partially promises to adhere to the old Saxon customs—promises which would not have been so often exacted if they had not been continually broken. The most celebrated of these is that conceded by King John, called Magna Charta, or the Great Charter. Its privileges are in a great measure constitutional, and it has often been said that it was procured for the advantage of the aristocracy, and not of the people; but it is not without stipulations in favour of the latter, protecting them both from the crown and from the nobility. It restricts the tyrannical forest laws, and the arbitrary exactions by feudal lords from their vassals. The clause which has attracted chief interest, however, is that which says that no freeman shall be affected in his person or property, save by the legal judgment of his peers, or by the law of the land. Legal writers have found a stately tree of liberty growing out of the seed planted by this simple sentence. They discover in it the origin of that judicial strictness which has kept the English judges so close to the rules laid down for them in the books and decisions of their predecessors. The judgment by peers is said to refer to jury trial, and it is urged that the whole clause strikes against arbitrary imprisonments, and involves the principle of the *habeas corpus*, by which every man, whose liberty is restricted, may demand to be brought before some competent court, in order that he may be either convicted or liberated. The Great Charter has always been a favourite object of veneration both with the aristocracy and the people, and Sir Edward Coke reckons no less than thirty different occasions on which it was ratified.

Civil liberty may be defined as the permission of such an amount of free action as it is most conducive to the welfare of all that each individual should possess. This is one of the most important objects of the laws, and the circumstances which conduce to its existence are among the most interesting in legal history. In England, the progress of liberty has been in a great measure attributed to the division of interests in the country. The crown had an interest in checking the power of the great nobility. That the exercise of this power was essential to the liberty that has existed in England, is apparent in contemplating the state of France and Germany, where the aristocracy made themselves either quite or nearly independent of the crown, and revelled in the tyranny of their despotic wills unchecked. A very important blow to the power of the aristocracy was accomplished by Edward I. in 1290, by the abolition of the system of sub-feuing. From that day, no vassal of the crown could grant lands to be held of himself, as he may to this day in Scotland—he could only put a new vassal in his own place, as an adherent of the crown. There is evidence that a similar law was passed in Scotland, but the crown was not strong enough to enforce an enactment which deprived the aristocracy of the privilege of being petty sovereigns. The disputes with the church were not without their service. The attempts of the ecclesiastics to urge the claims of their Roman and canon laws, caused the common lawyers to isolate themselves from the slavish doctrines of these systems, and to resist their encroachment with true professional hatred. It was in the universities of course that the clergy had their chief influence; and the students of the common law formed themselves into rival institutions, from which originated the Inns of Court. Then there was in the boroughs a separate interest, powerfully pointing towards freedom, and possessed of an innuence not to be despised. The tendency of all these circumstances seems to have been, a gradual return to Saxon freedom, and a fixing of the common law in conformity with the long-cherished feelings of the English people.

That strong-minded and clear-headed man Edward I., whose ambition was so heavy a curse to his neighbours, took a great stride in the establishment of the common law. Of his reforms, as enumerated by Blackstone, we give the following specimens:—'He established, confirmed, and settled the Great Charter and Charter of Forests. He gave a mortal wound to the encroachments of the pope and his clergy, by limiting and establishing the grounds of ecclesiastical jurisdiction; and by obliging the ordinary, to whom all the goods of intestates at that time belonged, to discharge the debts of the deceased. He defined the limits of the several temporal courts of the highest jurisdiction—those of the King's Bench, Common Pleas, and Exchequer—so as they might not interfere with each other's proper business; to do which they must now have recourse to a fiction, very necessary and beneficial in the present enlarged state of property. He settled the boundaries of the inferior courts in counties, hundreds, and manors, confining them to causes of no great amount, according to their primitive institution, though of considerably greater than by the alteration of the value of money they are now permitted to determine. He secured the property of the subject by abolishing all arbitrary taxes, and talliages levied without consent of the national council. He guarded the common justice of the kingdom from abuses, by giving up the royal prerogative of sending mandates to interfere in private causes. He instituted a speedier way for the recovery of debts, by granting execution, not only upon goods and chattels, but also upon lands, by writ of *elegit*, which was of signal benefit to a trading people; and upon the same commercial ideas, he also allowed the charging of lands in a statute merchant, to pay debts contracted in trade, contrary to all feudal principles.' This last-mentioned

reform refers to measures for enabling a creditor to get possession of his debtor's land in payment of his debt. How opposed such a remedy would be to feudal principles may easily be conceived; and the boldness with which Edward made his reforms will be felt when it is considered that what he had thus commenced was only completed in 1833. If the debt of a landed proprietor were not substantiated by some bond or other document, his land could not be applied in payment of it on his decease; and it was only in that year that landed property was made fully available for 'simple contract debts.' The statement that Edward imposed limits on ecclesiastical jurisdictions, refers to the authority which the clergy arrogated regarding wills—already mentioned under the head of the canon law. Edward allowed them the charge of the deceased's effects, but compelled them to employ the money in paying his debts.

From the period when we discover any branch of the common law in existence, we find its observance rigorously enforced by the judges. Of course, they had very frequently, as society progressed, to apply it to the wants of an age very different from that in which it was invented; but, in doing so, instead of directly altering the law, which they always viewed as beyond their power, they accomplished the change by a manœuvre almost peculiar to the law of England, called 'a fiction.' A fiction may be defined to be the taking for granted that a thing has been done which has not been done, and acting accordingly. For instance, if a man had taken an article in loan or on hire, and refused to give it up to the owner, the legal remedy, by the common law, was a very complicated one. In the case, however, where a man had found another's property which he refused to restore, there was a very expeditious and distinct remedy. It occurred to lawyers, that the kind of process used in this latter case was the very thing that would be most suitable for the other; and therefore, when they brought an action against a person who thus wrongfully detained the goods of another, they stated that he had found them, and the judges, agreeing in the propriety of the form of action being applied to the purpose, would not allow the party to show that there was no finding in the case. Hence the well-known action of trover, from the French *trouver*, to find. Some curious illustrations of fictions of law will be given when we describe the method in which the courts acquired their jurisdiction.

Fictions were not, however, the only means by which the judges, while adhering apparently to the letter of the law, could adjust it to their own views of the wants of society. A far-seeing judge who looked forward to the probable rise of a new system of transactions, could, by a swaying of the principles of the law that might be quite imperceptible at the moment, adapt them to the new exigencies. It was thus that Lord Mansfield, without the aid of statute, created the law of insurance. There are frequently many underwriters, or insurers to a policy; and had the practice been as it was, each would have had to be prosecuted separately on the occasion of a loss; but Mansfield, by a very slight divergence from previous practice, brought all the claims in a policy into one action—an expedient without which the system as it at present stands could not have existed. This was accomplished by a rule of court known by the name of the Consolidation Rule, by which all the actions except one is stayed, on the various defendants becoming bound to abide by the issue of that action. In their covert efforts to change the laws, the judges did not spare even acts of parliament. They managed to hit a blow at the power of the aristocracy, by limiting the operation of the statute of entails. When the holder of the entailed estate wished to sell it, he let the buyer bring an action against him, alleging that he had no title. He said he had bought the property from some one—usually the crier of the court—whose duty it was to support his title. The crier being called in, made default, and was nominally adjudged to give the holder under the entail an equivalent, with whom there was no effectual competitor, while the estate was adjudged to the purchaser.

The repositories of the common law are the treatises of eminent lawyers and the reports of decisions. Of the former, there are several of the thirteenth and fourteenth centuries—Glanvil, Bracton, Hengham, and the book called Fleta, the authorship of which is unknown. Lyttleton's treatise on Tenures, the work of a more matured system, was long the text-book in the practice of the feudal law. It was in the humble form of a comment on this work, that the great Chief-Justice Coke issued the vast treasury of legal learning so familiarly known as 'Coke upon Lyttleton,' a book which is in itself an almost inexhaustible subject of study to the lawyer. The next great name is Blackstone, a man who brought elegant accomplishments to bear on the austere drudgery of the law, and wrote a book, the clear perspicuity of which has made many men acquainted with the laws of their country who would have otherwise remained profoundly ignorant of them. The book has one great defect, that, professing to be not merely an exposition of the laws but an estimate of their worth, it bestows indiscriminate eulogy on all the vices of the system as well as its advantages. The reverential eye with which English lawyers look upon whatever is ancient in the common law, is singularly apparent in the majority of law-books. If any great authority, such as Coke or Blackstone, has treated of a particular subject, whoever afterwards writes upon it seems to be held bound to incorporate all that he has said, not only in spirit, but in words. As the passages are not marked as quoted, the effect is a very peculiar one; for the reader, after perusing a few sentences in the easy flow of the nineteenth century, finds himself unexpectedly entangled in the quaint language of the reign of James I., without the slightest hint that he is going to get, not the statement of the author himself, but something taken from Coke or Spelman. Of the reports of cases there is now a vast collection. From the time of Edward I. to that of Henry VIII., they were annually collected by officers appointed for the purpose, and were called year-books. They have latterly been published by private reporters. As they are all precedents for guidance in succeeding cases, and therefore the source to which the public look for the interpretation of the laws they must obey, it may be questioned whether they should not be officially recorded by persons responsible for the accuracy of their reports. This plan has to a certain extent been adopted in America.

Law of Equity.

The peculiar strictness with which the common law was administered, gave rise to the other great division of English jurisprudence—the law of equity. This was originally a system by which relief was given in cases where a strict interpretation of the common law would have produced injustice. It could look to the influence of accidents and frauds when common law could not. A deed, for instance, was lost. The common law courts could hear nothing about what might have been its contents. They could see nothing, know nothing, act on nothing, but the express words of the deed as set before them; and as that could not be found, the party must suffer. Here the court of equity came to his relief, by compelling a 'discovery' of the contents of the document. When a trustee was put in possession, common law could not look at him in any other light but as holding for his own behoof; but equity compelled him to do his duty to his employers. Where an obligation was to pay, common law could comprehend its nature and exact performance, but if it was to perform any other act, the assistance of equity was generally necessary. Again, the courts of law might give a remedy for a mischief after it had been perpetrated, but they could not interfere to prevent it. This necessary branch of legal administration came likewise within the jurisdiction of the judge in equity, who, on cause shown, could issue his 'injunction.'

The origin of this system is as obscure as that of the

common law, though it is evidently of a more modern date, having been introduced as a remedy to the evils of the latter. The earlier law-books do not mention it, and it was probably long in operation as a sort of exception to the ordinary course of law, before lawyers would acknowledge it as a system. Its most plausible origin is simply this—that when a person suffered a manifest injury which the ordinary courts could not remedy, he applied for redress to the sovereign in person. The king's conscience-keeper, or chaplain, became the referee on these occasions, and what he did he sealed, by way of testimony of the royal authority, with the king's seal. Hence the origin of the lord chancellor with his great seal, whose office, in this form, has been traced, or imagined to be traced, so far back as the days of Edward the Confessor. In early times, the chancellors were ecclesiastics, and they thus were in the habit of adjusting their equity, and the form in which they administered, it to the civil law. This occasioned great feuds with the common law courts, which at the commencement of the seventeenth century raged so fierce, that in a case where a remedy was sought in equity from the proceedings of the Court of King's Bench, the lawyers who conducted the proceeding, and a master in Chancery, were indicted for an offence. With the assistance of King James, whose legal notions were derived from the civilians, the courts of equity triumphed. The great Sir Edward Coke was then at the head of the King's Bench—a man who, notwithstanding his harsh and tyrannical acts, must still be admired for the bravery with which he supported the strict administration of the law, however high might be the personage who wished to evade it. Whatever may have been the origin of equity, it became at last a fixed system of law. It is a popular mistake that a judge in equity gives his decision according to what is called 'the general principles of equity and justice,' without reference to strict rules. He is bound down by precedents and rules, and there are many acts of parliament which regulate his proceedings; so that in reality equity is but a department of the general system of law.

Statute Law.

We have now to speak of the third branch of the law—statutes, or acts of parliament. The constitution of the legislature by which they are passed does not belong to the present subject; it need only be observed, that to be law, every word of an act requires to have the consent of the three branches of the legislature—the sovereign, the lords, and the commons. In very early times, acts of parliament seem to have been petitions by the parliament acceded to by the sovereign. The parliament was convened to supply the king with money, and while it kept him in suspense, it sometimes prepared a petition against grievances, to which a needy monarch found it prudent to accede. It became a practice for the judges, at the end of a session of parliament, to convert the substance of the 'petitions,' or 'bills,' which had been acceded to by the king, into acts. This practice was fraught with manifest danger, the judges having the power, when parliament had ceased to sit, of altering the intended provisions. To remedy this, the plan now followed was adopted, of making the bill contain the exact words which it was intended should constitute the act. Singularly enough, the bill is still in the form of a petition, and when it is made an act, the only alteration which takes place is, that the words 'May it therefore please your Majesty' are struck out.

A bill may be introduced either in the House of Commons or in the House of Lords. It is a rule that all bills affecting personal station—such as bills of attainder for treason, bills for naturalising foreigners, &c.—shall make their first appearance in the House of Lords. The commons possess the more substantial privilege of originating all bills of supply, or for the levying and appropriation of taxes. The privilege is jealously guarded, and it is usual, should the House of Lords amend such a measure, for the House of Commons to refuse to take it into consideration again, and to authorise their speaker to throw it over the table. About seventy years ago, in the case of a bill for the protection of game, the House of Lords thought fit to raise the penalties higher than those sanctioned by the lower house, and as the money went to the exchequer, the commons considered this an infringement of their privileges, and acted accordingly. All measures involving taxation originate in what is called 'a committee of supply,' in which the house is presumed to be sitting, not to debate great questions, but simply to transact pecuniary business. In the case of the introduction of any ordinary bill, amending the law, into the House of Commons, the first stage is, to obtain leave from the house to 'bring it in.' In the House of Lords, a member may move a bill without previously obtaining leave. On a bill being brought in, the next step is the first reading. A member moves that it be read a first time. If there be a party in the house bitterly opposed to the principle of the measure, it may be opposed in this stage, and a debate and division will of course ensue. If the objections be merely to the details, they are reserved for a future opportunity. On its passing this ordeal, the bill is ordered to be printed.

The next and principal ordeal is the second reading, after which the bill is referred to a committee of the whole house to be examined. In this committee, as in a committee of supply, the body is the same in every respect as that which constitutes the House of Commons, but the members are considered as having assembled, not to debate general questions, but to enter on a business-like examination of the various clauses of the measure. When the committee have examined all the clauses, the next formality is, that they report to the house, and that their report be received. It is then moved that the bill be read a third time. This stage is, in disputed measures, generally the last trial of party strength. If the third reading is carried, there is still another motion, to the effect 'that the bill do pass,' and this motion is seldom opposed. On the bill passing one house, it is conveyed to the other, where it has to pass through the same succession of readings. When amendments are made on a bill after it has passed through one of the houses, in that to which it is then sent, it must be re-transmitted to the house where it first passed. That house may accede to the amendments, and so let the bill pass; or it may reject the whole measure in consequence of them; or it may, adhering to its first opinions, hold a conference with the other house, with a view to a settlement of differences. When a bill has passed both houses, its next step is the royal assent, which may be given either by the sovereign personally, or by commission.

A bill that has received the royal assent becomes a law, the operation of which commences from the moment when the consent is exhibited, unless another point of time be stated in the act. All the statutes of a session are ranked in order, according to the date at which they have received the royal assent; and the whole set are distinguished from others by the year of the reign in which they have been passed. Technically, the whole legislation of a session is called one act, and each statute or act, according to the common acceptation of the term, is called a chapter of it. The privilege of printing the statutes in their original state, without note or comment, is reserved to the king's or queen's printers. In the printed edition of the statutes, each chapter is divided into sections. This arrangement has been adopted by the printers for convenience of reference, but in the original copy of the act there is no such division—the whole is a continuous manuscript without break. Nor is the division into chapters even authoritative. The consequence is, that when a new act is passed, making alteration on some part of a previous one, instead of specifying the chapter and section that is altered, it describes the act vaguely, as an act passed in such a session, for such a purpose.

Thus, in 1839, an act was passed to alter a section of the Patents Act, passed in 1837. For any ordinary purpose, this would have been called an act to amend the seventh section of the act 5 and 6 William IV. chapter 83; this would have led to the exact point at once: but as there are no such things as chapters and sections known in law, the legislature could only give a roundabout description, thus—'An act to amend an act of the fifth and sixth years of the reign of his late Majesty William IV., intituled an act to amend the law touching letters-patent for inventions.' Sometimes there is a series of acts, the latter ones amending those that have preceded them, so that the titles are involved in almost inextricable confusion. Even where the acts are divided into sections, as they are by the printers, it is found very difficult for lawyers to unravel their meaning, and to unprofessional people they are often a sealed book. A section generally consists of but one sentence; and as it has often to give a long narrative of things that must be done, independently of circumstances, and others that must be done in particular cases, and others that may be done, but are not imperative, and others that must not be done, &c., the comprehension of the full meaning of the sentence requires a strong mental effort. Among the statutes, there are individual sentences which, if printed in the type and form of an ordinary three-volume novel, would fill a hundred pages.

There are some acts which are passed every session in the same terms, such as the Mutiny Act, the indemnity for neglecting to take the oaths, &c. Independently of these, the statutes now passed in a single year generally fill a quarto volume of about 500 pages, very closely printed. Besides these acts, which generally either apply to the whole empire, or to some one of the great national divisions of it, there are annually passed several folio volumes of statutes, called 'Public Local Acts,' consisting of the police acts of the various towns, and acts for the construction and management of harbours, turnpike roads, bridges, gas-works, water-works, railways, &c. It is by virtue of legislative authority only that monopolies can be constituted in such cases, and that individuals can be compelled to sell their property for the use of public works. Hence, this is a separate branch of the statute law, comprising several hundred volumes.

The necessity of consolidating together the various statutes on different subjects, has from time to time been felt and expressed by the first legal statesmen of Britain. Lord Bacon, in whose days the statute law did not occupy a twentieth part of its present bulk, spoke with alarm of its overgrown size, and recommended that the whole ought to be abridged before it should become unmanageable. Already something has been done. The revenue acts, which occupy a large portion of the statute-book, were partially consolidated in 1826. About 400 acts relating to the customs, and similar matters, the prevention of smuggling, registration of vessels, &c., were repealed, and the new regulations on the various heads were consolidated in eight acts. To these acts each subsequent session has generally made some addition; but to prevent confusion from this source, a very simple remedy has been devised. When there have been several additions made to an act, a new one is framed, embodying the whole contents of the old act, as altered by the subsequent ones, and then all previous legislation on the subject is repealed. Thus, in 1833, all the custom-house acts were a second time consolidated; that is to say, the acts of 1826, with the additions and alterations made to them by later acts, were embodied together in a set of new acts, so that no one, in consulting the custom-house laws, can have to go farther back than 1833.

Measures, we believe, are in active preparation to extend this principle to other departments. At this moment there are upwards of 120 stamp-acts in operation, one of them as old as the reign of William III. The existence of these confused masses of legislation effectually prevents people from being able to act up to the laws, however willing they may be, and their protection is frequently in other people being equally ignorant of the laws that are broken. Invidious investigations into antiquated laws are thus occasionally the means of subjecting individuals to great hardships, by bringing punishment upon them which no foresight could have averted. Hence the trade of what are called common informers, whose vindication of the law has too often the effect of merely heaping calamities on individuals, instead of producing a uniform observance of the laws. The pursuit is a very unpopular one; but when laws are in every respect just and good, it is difficult to see how the enforcement of them can be other than an advantage; and it would appear to an unprejudiced stranger to be a somewhat contradictory practice, first to make laws, and then teach society to hate and punish those who put them in force. As society advances in intelligence, the necessity for the reform of the whole system of law, and its simplification into one comprehensive code, will become more apparent, while the mode of administering the law in courts will also be seen to require revision. Everything at present indicates that we are approaching the point when these important steps must be taken.

English Law Courts.

We have now to notice the various courts of law in England. The House of Lords must be mentioned as a general court of appeal from the whole kingdom. There is only one set of superior judicatures from which a reference may not come before it in some form or other—the criminal courts of Scotland. The origin of parliament is connected with the great council of the feudal kings, which gave them advice both in legislative and judicial matters. When parliament was separated into two houses, the judicial business adhered in general to the upper, and, probably at the instigation of the bishops, the Lords adopted the power of administering oaths, which was not possessed by the Commons—a circumstance which more distinctly marked their judicial character. To bring causes which have passed through the hands of learned judges under the direct cognisance of a body consisting of clergymen, soldiers, and young men of fashion, would be too preposterous to be practically adopted; and though the appeal is nominally taken to the House of Lords, it is heard and decided on by one of the eminent lawyers, of whom there are always several in the house, and generally by the Lord Chancellor. Independently of their powers as judges of appeal, the Peers act as a criminal court in all cases where a peer of the realm is tried for a capital crime. They are formed into a temporary tribunal for the occasion, presided over by a judge called the Lord High Steward. This official is properly the judge, the peers acting as a jury, and giving their verdict on the question of guilt. The directly feudal origin of this rule of ancient practice will be at once recognised.

The principal courts of first resort are naturally divided into courts of common law and courts of equity. The former are three in number: the King's or Queen's Bench, the Common Pleas, and the Exchequer. Each has a chief, and four assistant judges, called puisne or junior judges. These courts date their origin to the Conquest. On feudal principles, the Norman kings called all the principal causes which had, under the Saxons, proceeded before the county courts, to be decided in their own hall, or court, by their own great council, which was presided over by an officer called the Justiciar. This court, called the *Aula Regis*, or King's Court, at first followed the king's person—a great inconvenience, removed by Magna Charta, which fixed it permanently in Westminster. Under Edward I., the system was adopted of sending deputations from the court twice a year to try cases in various parts of the country. Under the same monarch, the jurisdiction of the court was split into three parts. To the justiciar, afterwards called Chief-Justice, were assigned

the pleas of the crown, as they were termed, involving all offences; and being the highest judicial officer in point of rank, his court was appointed to have cognisance over the two others. The matters connected with the exchequers—namely, the regulation of the royal domains, the collection of duties and other taxes—were committed to judges called Barons, presided over by a Chief-Baron. All questions about the possession of land, and other litigations between one citizen and another regarding matters of property, were called 'common pleas,' and were committed to certain justices, presided over by a chief-justice.

The King's or Queen's Bench is thus the chief criminal court, and the Exchequer is the principal tribunal for revenue matters; but these courts are by no means restricted to the departments to which they are so assigned—they possess, concurrently with the common pleas, a jurisdiction in all ordinary questions of common law. The manner in which they obtained this power is one of the most extraordinary circumstances in the history of the laws of any country. The instruments made use of were, as has been hinted, the fictions, described as a peculiarity of the English law. To get at the real motives which were at work, it is necessary to recollect that formerly not only the judges, but all the officials connected with the several courts, were paid by fees, the amount of which depended on the extent of business transacted. They were thus like so many tradesmen keeping shops for the sale of justice, each anxious to keep a large supply of whatever was most wanted, and to serve the public on the most tempting terms. In this manner the courts of law undersold the courts of equity by not demanding any sanction, such as an oath, for the truth of what litigants declared in their pleadings. An arduous run for business was carried on between the three common law courts, the accounts of which, as given in the legal histories and law-books, are infinitely grotesque. The extent to which a court could carry its jurisdiction by these means, depended less upon reason than upon the muscular power of those officers of the court who enforced its decrees. The Exchequer, when it attempted to levy taxes, was told occasionally that the person charged with them could not pay, by reason that his debtors had not paid what they owed him; while he hinted that if the Exchequer wished his money, they had better assist him in recovering it. On this, it became the practice of the Exchequer to assist those who were in debt to the crown to get payment of the money due to them. It occurred to some ingenious lawyers, employed to recover debts, that if they stated to the Court of Exchequer that certain clients were debtors of the crown, and could not pay by reason of their own debtors not satisfying their demands, the court would make very little inquiry into the truth of the statement, but would adjudicate in the case, and levy the money forthwith. The court made so little inquiry as to the truth of the case, that it would not allow the statement to be contradicted, however inaccurate it might be; and down to the year 1832, when one brought an action in the Court of Exchequer, it was a matter of form that he should say he was a debtor to the king, and that he could not pay his debt, unless an obligation, incurred in his favour by the defendant, were fulfilled. The jurisdiction of the King's Bench was limited to cases that were either purely criminal, or had some connection with offences. When any one, however, happened to be in the prison of the King's Bench for an offence, there was no means of getting at him but through that court; and so the plan was devised of stating that a man was in the King's Bench prison when he was not. 'And in process of time,' says Blackstone, 'it [the Court of King's Bench] began, by a fiction, to hold plea of all personal actions whatsoever, and has continued to do so for ages: it being surmised that the defendant is arrested for a supposed trespass, which he never has, in reality, committed; and being thus in custody of the marshal of the court, the plaintiff is at liberty to proceed against him for any other personal injury, which surmise of being in the marshal's custody the defendant is not at liberty to dispute.'

These mischievous fictions were not abolished until the year 1832, when, by act of parliament, a uniform process was established in the three common law courts. An appeal lies from the decision of any one of these courts to the judges of the other two, who, when met to decide on such appeals, constitute a court called the Exchequer Chamber. Fourteen of the fifteen judges who form these common law courts hold the assizes in the various county towns—in some of them twice, and in others thrice a year. Here they act both as civil and criminal judges. Offences committed in London and its vicinity are tried by a tribunal lately created, called the Central Criminal Court.

The origin of the authority of equity tribunals has been already considered. The principal establishment of this description in England is that of the Chancery. It has in it three distinct courts, and three judges—the chancellor, the vice-chancellor, and the master of the rolls. Formerly, all proceedings in bankruptcy centered with the lord chancellor, but the increasing importance of this class of business rendered it necessary to appropriate a separate court to the purpose. This was accomplished in 1832 by Lord Brougham's act. The term Bankruptcy is in England confined entirely to persons engaged in commerce; and the jurisdiction of the court is so limited. Previous to its formation, however, it had been found expedient to create a court for the relief of insolvent debtors who might not be engaged in trade, on their giving up their property to their creditors. By a late act for restricting imprisonment for debt, the practice of relieving insolvent debtors was improved, nearly on the model of the Scottish system of *cessio*, and a bankruptcy code was applied to debtors who might not be tradesmen. The utility and importance of the Insolvent Debtors' Court were thus materially enlarged. Another court was lately brought into existence, called the Judicial Committee of the Privy Council. It consists almost entirely of the judges of the other courts. Its principal jurisdiction is in appeals from the colonial courts, and the Court of Admiralty. This Court of Admiralty has jurisdiction in maritime contracts, and crimes committed on the high seas. Having to deal with matters in which the inhabitants of this and of other countries are jointly interested, it professes to follow, not the special law of England, but the general commercial law of modern Europe, founded on the Roman law. In time of war, the court receives a commission to adjudicate regarding prizes taken from enemies, or from neutrals committing breaches of neutrality.

Besides the tribunals mentioned, there are ecclesiastical courts in the two archiepiscopal provinces of Canterbury and York. In the former there are the Court of Arches, the Prerogative or Testamentary Court, and the Court of Peculiars; in the latter the Prerogative Court and the Chancery Court. There are also many inferior ecclesiastical courts. The chief jurisdiction exercised by these tribunals, besides questions of ecclesiastical discipline, is in matters relating to succession to moveable goods. If we were to complete the list of English tribunals, it would be necessary to include the justices of peace, who, besides many special powers in revenue and other matters conferred by act of parliament, sit, at the general and quarter-sessions, as judges in minor offences. In addition to all these, there are various courts, of greater or lesser jurisdiction, connected with cities and boroughs; and in some places establishments called Courts of Requests, for adjudicating in cases of petty debts.

Having thus detailed the legal system of England, it is unnecessary to describe that of Ireland, which is almost in all respects a model of it.

English Legal Usages.

The legal usages of England, though sanctioned by inveterate custom, are generally clumsy, expensive, and to all but lawyers, unsatisfactory. The very

education of lawyers at the *inns of court* in London, where they are supposed to receive instruction, and pursue certain studies, is a burlesque. The whole machinery of executing writs, or orders of court, is equally objectionable. *Imprisonment* of the person for the sake of safe custody is the ordinary means of enforcing claims in the civil law, and of punishing in criminal cases. The largest jail for the reception of debtors is the Queen's Bench prison, situated in Southwark. From the marshal or governor of this prison, however, a *rule*, or permission, may be obtained on payment, for liberty to go out of the prison for a day, or to reside within certain exterior bounds. In other words, a debtor possessing the means (abstracted from his creditors) may, while nominally in prison, be living at his ease and in the enjoyment of the general society of the neighbourhood.

Trial by Jury is a remarkable legal usage, which, in reference to criminal accusation, is of great antiquity, having its foundation in certain Anglo-Saxon forms favourable to individual liberty. It is alluded to in Magna Charta, wherein it is provided that all persons accused of crimes shall be tried by the judgment of their peers according to the laws of the realm. A jury is therefore presumed to consist of persons in a rank as nearly as possible analagous to that of the party charged with an offence. Practically, it is composed of individuals miscellaneous in rank, so as to insure impartiality in decision. In England, the jury may be said to be of two species, the grand and the petty jury. The *grand jury* consists of twenty-four persons summoned by the sheriff, to attend the court and present all offences committed within the county; that is, determine whether the cases of criminal accusation shall go before the petty jury. The jury so called examine witnesses on oath, and receive other evidence; if satisfied that there are grounds for trial, they *find a true bill*, as it is called, and the trial proceeds. The object of this institution is to prevent the oppression or damage of innocent persons; but in practice it is so clumsy as a method of investigation and deliberation, and so liable to error from the vast quantity of business to be hurried through, not to speak of being so burdensome to the lieges, that it would long since have been abolished, but for the rooted prejudices of the English in favour of old usages, however absurd and valueless. The time seems to have arrived when it will require to be superseded by the more efficient institution of a responsible public prosecutor.

The petty jury for the trial of those against whom a true bill is found, consists of twelve men, drawn by lot from a larger number summoned. This jury is the sole judge of the fact or facts charged, and its decisions require to be unanimous. In many instances a jury cannot conscientiously arrive at an unanimous conviction, in which case either one or more must yield to the majority; or the whole, after experiencing the pangs of hunger for one or two days, require to be discharged, when a new trial must ensue.

Trial by jury is usually considered to be the paladium of our rights and liberties; but this favourable view of its character evidently needs modification. It is principally useful as a safeguard against vindictive attempts at oppression on the part of the crown or other powerful accusers; yet even in this respect it has on various occasions proved faulty. If, however, it really shelters the subject, it can scarcely be said to be capable in all circumstances of protecting the crown. In Ireland, for example, where the English forms of grand and petty jury have been introduced, it is observable that there is scarcely a possibility of procuring a conviction where the state is the complaining and injured party, although the facts charged be proved beyond the possibility of cavil. Thus trial by jury can command respect only where there is a deep sense of rectitude, and a disregard of public clamour.

Habeas Corpus.—Only the law, not the sovereign or any functionary of government, can imprison the person of a subject, who can reclaim against wrongful or unconstitutional seizure and incarceration by an action of *habeas corpus;* that is, an action before a competent court to be released, or have the custody of his own person. In periods of civil commotion, the habeas corpus, as it is called, or power of replevin, is occasionally suspended by an act of the legislature; by which means the state can imprison without challenge, and dismiss without trial. As may be supposed, this serious infringement of the constitution is resorted to only in extreme cases.

LAW OF SCOTLAND.

From what has been already said, it will be gathered that the law of Scotland was chiefly composed of the feudal system and the Roman law. The former was in practice according to the form in which it had adapted itself to the peculiar customs of the country, the latter was taken from the doctrines of the civilians. The origin and progress of feudalism in Scotland are very obscure. The chroniclers attribute the foundation of the system to Malcolm II., in the eleventh century, but with little probability. It is more likely that, with the resort of foreigners, Saxon and Norman, to the court of the Scottish king subsequently to the conquest of England, the system was imperceptibly and gradually introduced. The monarchs, who were ambitious of presiding over a distinguished court, gave particular encouragement to the Normans, to whom they granted large fiefs or lordships; and it was natural that they should return the same homage to which they were accustomed in the country of their origin. The whole of the Lowlands, indeed, and a great part of the Highlands, became nearly as thickly adorned with Norman aristocratic names as the broad plains of England; and it was this alien aristocracy that submitted with so much indifference to the claims and encroachments of Edward I. There appear to have been many points on which the earlier laws of the two divisions of the island were identical. In England, however, as we have already seen, the feudal system received many checks, while in Scotland it was allowed to grow rank; and the deference paid to the civil law in the north served to widen the distinction. The alliance and continued intercourse with France, moreover, naturally drew the legal practice in the direction of the example set by that country.

There is little information to be derived concerning the practice of the law in Scotland previous to the sixteenth century. Edward I. probably destroyed some vestiges, through which its history might have been traced; but he seems to have been charged by some antiquaries with the destruction of more than ever existed. He did more, probably, by fabrication than by destruction to poison the sources of Scottish jurisprudence. The earliest alleged collection of the laws, commonly called the *Regiam Majestatem*, bears so near a resemblance to the English work of Glanvil, noticed above, that it is naturally supposed to have been a digest, not of what the laws were, but of what the conqueror wished them to be. The earliest Scottish legal writer whose works are quoted is Balfour, who prepared about the latter end of the sixteenth century, a compendium, chiefly derived from the Regiam Majestatem, the acts of parliament, and the decisions of the court. In the reign of James VI., a commission was appointed to make inquiry into the laws, of which the celebrated Sir John Skene was a member. The commissioners collected and published many acts of parliament, the Regiam Majestatem and other consuetudinary laws, such as the customs of the royal burghs; and Sir John Skene wrote an interesting treatise on the meaning of technical legal expressions.

The first really scientific writer on the law of Scotland, however, was Sir Thomas Craig, whose book on the feudal law was published in 1655. It is a work of great learning and thought, in which the reader is somewhat surprised to find that, though the work professes to be a Scottish law-book, it should derive so much of its learning from the practice of continental

nations. The next great authority is Lord Stair, the equivocal statesman of the reign of James VII., whose Institute, on the model of that of Justinian, is remarkable for the breadth of its legal principles, and the acuteness with which they are practically applied. Soon after the middle of the eighteenth century, a second Institute was prepared by Mr Erskine, professor of Scottish law, more suited to the knowledge of the age than that of Stair, but more dry and formal. Sir Walter Scott has justly denominated Erskine's Institute the Scottish 'Coke upon Lyttleton.' There were formerly few opportunities of acquiring a legal education in Scotland, and it was the practice for the youth studying the Scottish law to repair to one of the continental universities, among which Leyden and Paris were preferred. On the occasion of the appointment to a chair of law in Aberdeen, in the seventeenth century, Spalding the Chronicler says, it was 'strange to see ane man admitted to teach the lawes, who was never out of the countrie studieing and learning the lawes;' thus expressing his astonishment that any man could be presumed to become acquainted with a system of law on the spot where it is administered. The civil law is still professedly studied in Scotland, but its ancient influence has sunk beneath the progress of commerce, and the increase of statutory regulations, which compel the lawyer to spend much of his time with acts of parliament and reports of decisions.

Scotland has a considerable quantity of early statute law, but not nearly so much as England. Down to the time of the Revolution, the general principles only of the acts had the assent of the assembled parliament—the details were all prepared by a committee called the Lords of the Articles. The older acts are remarkable for their brevity and precision, in which respects they greatly excel the clumsy and wordy acts of parliament of the United Kingdom, which, since the Union, has legislated for Scotland, often with little regard to the peculiarities of Scottish practice. According to a usage derived from the civil law, acts of parliament become repealed by disuse in Scotland, technically, get into desuetude—a principle unknown in English law.

The earliest superior tribunals in Scotland, were either the parliament, as the king's great council, or a committee of it, acting with the delegated powers of the whole body. There was likewise, as in England, a king's justiciar, whose authority was vast, and not very well defined, especially in criminal matters. Committees of parliament were, in the fifteenth and the beginning of the sixteenth century, sometimes formed into regular courts of justice, in which, however, a certain degree of fluctuation could not be avoided. In 1532, the present Court of Session was constituted, on the model, it is believed, of the parliament of Paris. The chancellor, whose principal duties disappeared at the Union, was chairman of this body. It consisted of fifteen judges including a president, who was chairman in absence of the chancellor. In 1830, the number of judges was reduced to thirteen; and about the same time, the authority of some other tribunals, the chief of which were the Courts of Admiralty and Exchequer, was transferred to the Court of Session. It consists of two divisions, which are separate tribunals. Some of the judges also act as individual judges in courts of their own, in which capacity they are termed 'lords ordinary.' An ordinary case, on coming into court, is discussed before a lord ordinary, from whose decision there is a reference to one of the divisions of the 'Inner House,' as it is termed, where the remaining judges sit collectively. From them there is an appeal to the House of Lords. There is no such conventional distinction as that between law and equity known in Scotland, and hence English lawyers, who are apt to measure all other systems by their own, absurdly enough speak of the Court of Session as a court 'both of law and equity.' Besides the usual adjudication of litigated cases, there are two very useful descriptions of action peculiar to this court. The one is called an action of 'declarator,' which a person who is puzzled about any difficulty, and is afraid of committing an illegal act, may bring, to have the law as to the point declared, and his course of action made plain; another is called a 'multiplepoinding,' which may be raised by a man having money in his hands which more than one person is claiming, that he may know to whom he can legally pay it. Trial by jury was not, until very lately, added to the jurisdiction of this court. It is limited to certain descriptions of cases, and is far from popular.

The judges in the Court of Session, the advocates or barristers, the writers to the signet or practising attorneys, and other functionaries, form an institution styled the *College of Justice*.

The principal criminal court is the Court of Justiciary, consisting of seven of the judges of the Court of Session, who sit in Edinburgh, and commission some of their number to hold circuits in the country. The most remarkable peculiarity in Scottish legal usages, is the practice of criminal prosecution, which is clear, simple, and effective. All crimes of a high class are prosecuted at the instance of the *Lord Advocate*, or chief public prosecutor, at the expense of the country. Lesser crimes are prosecuted by *Procurators Fiscal*, of whom one is attached to each sheriffdom. In no case is the party injured put to any trouble or expense. The Lord Advocate, who is appointed by the crown, along with crown-counsel, alone judge of the propriety of prosecuting for crimes, there being no grand jury. The jury before whom cases for trial are brought consists of fifteen persons selected by lot from forty-five summoned jurors, and the decision or verdict is by a majority. The Scottish criminal law is partly statute, partly founded on long usage. There are many offences which, by the latter portion of the law, are punishable with death, if the prosecutor do not restrict the extent of punishment to be awarded, which he now does in almost every case except murder. The sheriffs, or local judges of counties, have important judicial powers, both civil and criminal. The former extends to every description of dispute regarding property, except what refers to land. The powers of these judges have lately received extensive additions, especially in matters of insolvency and bankruptcy. They do not employ a jury, except in criminal cases, in which their power of inflicting punishment does not exceed imprisonment. The *sheriffs* of the Scottish counties are advocates, practising before the supreme courts, not honorary functionaries, as in England. In each county there is, besides, a resident sheriff, or *sheriff-substitute*, who issues warrants and holds civil and criminal courts. To this useful class of functionaries Scotland is much indebted.

In Scotland, there is a usage as absurd as that of granting *rules* in the Queen's Bench prison. A debtor from any part of the United Kingdom may take the benefit of *sanctuary* in Holyrood, a suburb of Edinburgh, including some fine open grounds. While in this sanctuary, and having a written protection, procurable for a fee, the debtor is sheltered against all writs for civil claims, those of the state alone excepted; and he is at liberty to quit this sanctuary during the whole twenty-four hours of Sunday. This is the last existing relic of the privilege of sanctuary in Britain, perhaps in Europe.

There has latterly been some indications of the assimilation of the legal usages of Scotland to those of England, and it is highly desirable that an end should speedily be put to all existing diversities.

THE FRENCH CODES.

The ancient laws of France were a mixture of the civil, feudal, and canon law. Partly they were the doctrines of the authorities on the civil law, and partly they were the ordinances issued by the various monarchs. By far the greatest portion, however, in bulk, consisted of the peculiar feudal customs of the various provinces. In these the feudal system was sometimes retained in so high a state of purity, that the collections of provincial customs are esteemed excellent authorities on the subject. But it was not merely in each province

that there was a local custom. The power of the crown, or any other paramount legislature, was so feeble, that wherever an assembly of men were held together by one common tie, as where they were co-vassals of one lord, or members of the same civic community, they had in some measure a code of laws of their own. The royal codes, which existed on a large scale, are estimated at about 300, but of the number of inferior local customs it would be impossible to make an estimate. Voltaire observes, that a man travelling through his country has to change laws as often as he has to change horses, and that the most learned barrister in one village will be a complete ignoramus a few miles off. The seignorial courts were divided into three grades, according to the extent of the penal authority exercised by them. The principal courts of law were the parliaments of the respective provinces. Seats in them were generally held by purchase, or were in the hereditary succession of great families, who thus constituted a species of professional nobility. The decrees of these bodies were often baffled or reversed by the royal authority, exercised in the well-known form of *lettres de cachet*. These alterations of the decisions of the courts, however, were performed not as a judicial revision, but by the simple authority of the king; and thus the parliaments, being subject to no judicial control or responsibility, adhered but slightly to fixed rules of law, and often acted according to their own will and discretion. The jury, even so much of it as may have existed under the old feudal form, had entirely disappeared, and proceedings were conducted in secret. Criminal investigations, instead of terminating in a conclusive trial as in England, were protracted through a lingering succession of written pleadings and secret investigations, from which the accused could never calculate on being free. The torture was extensively employed; but in the general case, only when there was as much circumstantial evidence as would justify a conviction in this country.

The whole of this system was swept suddenly away before the tide of the Revolution, but amid the troubled times that succeeded, it was long ere rulers could find peace and leisure for the erection of a substitute. In 1800, Napoleon appointed a commission to draw up a project of a civil code. The project when prepared was circulated for comment and suggestion, and was afterwards, along with the observations made on it by the different courts of law, discussed in the council of state and the tribunate. Thus was formed the *Code Civil*, or civil code of France, more generally known by the term *Code Napoleon*, which was applied to it under the Empire. Nearly at the same time, and in the same manner, was framed the *Code de Procédure Civile*, or code for regulating the form of process in civil actions, and specifying the jurisdictions of the various courts. Being a subject more connected with technical detail, and involving less of general principle than the civil code, its provisions were left almost entirely to the arrangement of the lawyers. Besides the technical directions in which lawyers are almost wholly interested, there are in this manual many which concern the ordinary proceedings of citizens at large, such as directions for the order to be taken regarding the effects of a deceased person, &c. This code is generally accompanied by a table of fees in law proceedings. In 1807, another code was promulgated, called the *Code de Commerce*, consisting of 648 sections. This is the commercial code of France, regulating partnership, bills and notes, banking, shipping, bankruptcy, &c. By this code provision is made for merchants choosing boards or courts from among their own number, called *Tribunaux de Commerce*. The jurisdiction of these courts, which are very numerous, extends to questions between merchants, and disputes arising out of commercial transactions. In criminal legislation, a different order was pursued from that adopted in the civil; the procedure code was prepared and adopted before the crimes to which it was to apply, and the punishments it was to enforce, were defined. The *Code d'Instruction Criminelle* was promulgated in 1808, and the *Code Pénal* in 1810.

Such were the laws issued under the government of Napoleon, commonly called *Les Cinq Codes*, or the Five Codes. There are other collections of regulations, which should be added to make up a complete body of French laws—a military code, issued by Napoleon; regulations concerning woods and forests, issued under Charles X.; various laws as to the press and theatrical exhibitions, and alterations of the penal code, issued under the government of Louis-Philippe; and lastly, the enactments under the existing republic. It is simply in the Five Codes, however, passed under Napoleon, and confirmed at the Restoration, that the modern laws of France are known to Europe at large. They are generally published in a small, thick, closely-printed volume; and for the conciseness, clearness, and elegance of their language, and their intrinsic merits, they are a favourite subject of study with many British lawyers, while there are few places in civilised Europe in which they are not generally known. Independently of the division into books and sections, the paragraphs in each code are numbered straight on from the commencement, an arrangement which gives peculiar facilities for reference. Thus there are in the civil code 2281 consecutively numbered paragraphs. In a country where the material of the law is so gigantic as it is in England, it is of the highest interest to mark the practical working of this grand effort at simplification. To an unlearned person in this country, it is a much easier thing to know the law of France on any particular point, than the law he is living under. If an English lawyer is asked a question, his answer involves references to commentaries, decisions, and statutes innumerable; but in the general case, the answer of a French lawyer bears simple reference to such a paragraph of such a code.

The French codes adopt the phraseology of the Roman law and many of its principles. The most striking deviation from the previous law of France, and the present system of other countries, is perhaps in the rules respecting succession. The children succeed to equal shares of the parents' property, whether it consist of land or movables; and if there be no legitimate children, illegitimate children may succeed. The parent is limited in the disposal of his property by will. He can only bequeath the half if he have one legitimate child, and the third if he have two. Restrictions somewhat similar are to be found in other countries with respect to movable property, but not as to land. The effect which the extensive partition, naturally occasioned by this law, has effected, and may effect, in France, is a subject of great interest to political economists. In the mercantile law there are several provisions unknown in this country, such as registers for hypothecs or securities held over movable goods or merchandise, and societies 'en commandite,' or partnerships in which certain managing members are responsible for the obligations of the company to the extent of their whole property, while the sleeping partners who advance money are not responsible beyond the amount of their shares. The chief improvement in the criminal law effected during the Revolution, and sanctioned by the code of instruction, was jury trial, to which Napoleon was much opposed: the system, as finally settled, bore more resemblance to the Scottish than to the English form, prosecutions being conducted by public prosecutors, there being no grand jury, and the jury of final trial deciding by a majority. In other respects, the criminal law is more remarkable for its austerity than for its subserviency to the general good of the public. With Napoleon, though that object was not neglected, it was made secondary to the consolidation of his own power; and offences are measured less by their pernicious effects on society at large, than by the trouble or danger they might occasion to rulers. Hence was adopted in many cases the stern and simple method of putting arbitrary power over criminals into the hands of the administrators of the law, while punishments of the highest kind were reserved for offences against the authorities.

HISTORY OF ANCIENT NATIONS.

As the memory of a man extends back only to some point in his early boyhood, so the memory of our race extends back only to about 3000 years from the present date, leaving an indefinite space before that, during which the infancy of the species must have been transacted. Nor does the Scriptural account of the creation settle this point. As many as two hundred different calculations as to the age of our species have been founded, by different divines, on the statements of the sacred records—the discrepancy arising from the uncertainty of those texts of the Old Testament in which *numbers* occur. The longest of these calculations dates the creation of man at about 8800 years from the present time, or about 7000 years before the birth of Christ; the shortest at about 5300 years from the present time, or 3500 years before the birth of Christ: the system usually adopted by historians is that of Archbishop Usher, which fixes the event at B.C. 4004, or 5853 years from the present date.

The general consent of mankind points to the region of Central Asia as having been the original seat from which the human race dispersed itself over the globe; and accordingly it is this region, and especially the western portion of it, which we find to have been the theatre of the earliest recorded transactions. In short, it was in Central Asia that the first large mass of ripened humanity was accumulated—a great central nucleus of human life, so to speak, constantly enlarging, and from which emissaries incessantly streamed out over the globe in all directions. In process of time this great central mass having swollen out till it filled Asia and Africa, broke up into three fragments—thus giving parentage to the three leading varieties* into which ethnographers divide the human species—the Caucasian, the Mongolian, and the Ethiopian or Negro—the Caucasians overspreading southern and western Asia; the Mongolians overspreading northern and eastern Asia; and the Ethiopian overspreading Africa. From these three sources streamed forth branches which, intermingling in various proportions, have constituted the various nations of the earth.

Differing from each other in physiological characteristics, the three great varieties of the human species have differed also widely in their historical career. The germs of a grand progressive development seem to have been implanted specially in the Caucasian variety, the parent stock of all the great civilised nations of ancient and modern times. History, therefore, concerns itself chiefly with this variety: in the evolution of whose destinies the true thread of human progress is to be found. Ere proceeding, however, to sketch the early development of this highly-endowed variety of our species in the nations of antiquity, a few observations may be offered regarding the other two—the Ethiopian and Mongolian—which began the race of life along with the Caucasian, and whose destinies, doubtless, whatever may have been their historical functions hitherto, are involved in some profound and beautiful manner with the bearing of the race as a whole.

ETHIOPIAN OR NEGRO HISTORY.

A German historian thus sums up all that is known of Ethiopian history—that is, of the part which the great Negro race, inhabiting all Africa with the exception of the north-eastern coasts, performed in the general affairs of mankind in the early ages of the world:—'On the history of this division of the species two remarks may be made: the one, that a now entirely extinct knowledge of the extension and power of this branch of the human family must have been forced upon even the Greeks—their early poets and historians; the other, that the Ethiopian history is interwoven throughout with that of Egypt. As regards the first remark, it is clear that in the earliest ages this branch of the race must have played an important part, since Meroe (in the present Nubia) is mentioned both by Herodotus (B.C. 408) and Strabo (A.D. 20); by the one as a still-existing, by the other as a formerly-existing seat of royalty, and centre of the Ethiopian religion and civilisation.* To this Strabo adds, that the race

* In the PHYSICAL HISTORY OF MAN (No. 51), we admitted the five varieties as described by Blumenbach—namely, the Caucasian, Mongolian, Ethiopian, Malay, and American; but in as far as the social or historical progress of the race is concerned, the two latter may be considered as having no existence.

* Some years ago, a traveller, Mr G. A. Hoskins, visited the site of this capital state of ancient Ethiopia, an island, if it may be so called, about 300 miles long, enclosed within two forking branches of the Nile. He found in it several distinct groups of magnificent pyramidal structures. Of one ruin he says—'Never were my feelings more ardently excited than in approaching, after so tedious a journey, to this magnificent necropolis. The appearance of the pyramids in the distance announced their importance; but I was gratified beyond my most sanguine expectations when I found myself in the midst of them. The pyramids of Gizeh are magnificent, wonderful from their stupendous magnitude; but for picturesque effect and elegance of architectural design, I infinitely prefer those of Meroe. I expected to find few such remains here, and certainly nothing so imposing, so interesting, as these sepulchres, doubtless of the kings and queens of Ethiopia. I stood for some time lost in admiration. This, then, was the necropolis, or city of the dead! But where was the city itself, Meroe, its temples and palaces? A large space, about 2000 feet in length, and the same distance from the river, strewed with burnt brick and with some fragments of walls, and stones similar to those used in the erection of the pyramids, formed, doubtless, part of that celebrated site. The idea that this is the exact situation of the city is strengthened by the remark of Strabo, that the walls of the habitations were built of bricks. These indicate, without doubt, the site of that cradle of the arts which distinguish a civilised from a barbarous society. Of the birthplace of the arts and sciences, the wild natives of the adjacent villages have made a miserable burying-place: of the city of the learned—"its cloud-capt towers," its "gorgeous palaces," its "solemn temples,"

spread from the boundaries of Egypt over the mountains of Atlas, as far as the Gaditanian Straits. Ephorus, too (B. C. 405), seems to have had a very great impression of the power of the Ethiopians, since he names in the east the Indians, in the south the Ethiopians, in the west the Celts, in the north the Scythians, as the most mighty and numerous peoples of the known earth. Already in Strabo's time, however, their ancient power had been gone for an indefinite period, and the Negro states found themselves, after Meroe had ceased to be a religious capital, almost in the same situation as that in which they still continue. The second remark on the Negro branch of the human race and its history, can only be fully elucidated when the interpretation of the inscriptions on Egyptian monuments shall have been farther advanced. The latest travels into Abyssinia show this much—that at one time the Egyptian religion and civilisation extended over the principal seat of the northern Negroes. Single mummies and monumental figures corroborate what Herodotus expressly says, that a great portion of the Egyptians of his time had black skins and woolly hair; hence we infer that the Negro race had combined itself intimately with the Caucasian part of the population. Not these notices only, but the express testimonies also of the Hebrew annals, show Egypt to have contained an abundance of Negroes, and mention a conquering king invading it at the head of a Negro host, and governing it for a considerable time. The nature of the accounts on which we must found does not permit us to give an accurate statement; we remark, however, that the Indians, the Egyptians, and the Babylonians, are not the only peoples which aimed at becoming world-conquerors before the historic age, but that also to the Ethiopian stock warlike kings were not wanting in the early times. The Mongols alone seem to have enjoyed a happy repose within their own seats in the primitive historic times, and those antecedent to them; they appear first very late as conquerors and destroyers in the history of the west. If, indeed, the hero-king of the Ethiopians, Tearcho, were one and the same with the Tirhakah of the Book of Kings (2 Kings, xix. 9), then the wonder of those stories would disappear which were handed down by tradition to the Greeks; but even Bochart has combated this belief, and we cannot reconcile it with the circumstances which are related of both. It remains for us only to observe, by way of summary, that in an age antecedent to the historic, the Ethiopian peoples may have been associated together in a more regular manner than in our or Grecian and Roman times; and that their distant expeditions may have been so formidable, both to the Europeans as far as the Ægean Sea in the east, and to the dwellers on the Gaditanian Straits (Gibraltar) on the west, that the dim knowledge of the fact was not lost even in late times. In more recent ages we observe here and there an Ethiopian influence, and especially in the Egyptian history; but as concerns the general progress of the human species, the Negro race never acquired any vital importance.'*

The foregoing observations may be summed up in this proposition:—That in the most remote antiquity, Africa was overspread by the Negro variety of the human species; that in those parts of the continent to which the knowledge of the ancient geographers did not extend—namely, all south of Egypt and the Great Desert—the Negro race degenerated, or at least dispersed into tribes, kingdoms, &c. constituting a great savage system within its own torrid abode, similar to that which even now, in the adult age of the world, we are vainly attempting to penetrate; but that on the coasts of the Mediterranean and the Red Sea, the race either preserved its original faculty and intelligence longer, or was so improved by contact and intermixture with its Caucasian neighbours, as to constitute, under the name of the Ethiopians, one of the great anti-historic dynasties of the world; and that this dynasty ebbed and flowed against the Caucasian populations of western Asia and eastern Europe, thus giving rise to mixture of races along the African coasts of the north and east, until at length, leaving these mixed races to act their part awhile, the pure Ethiopian himself retired from historic view into Central Africa, where he lay concealed, till again in modern times he was dragged forth to become the slave of his Caucasian brother. Thus Negro history, hitherto, has exhibited a retrogression from a point once occupied, rather than a progress in civilisation. Even this fact, however, must somehow be subordinate to a great law of general progress; and it is gratifying to know that, on the coast of Africa, a settlement has recently been formed called Liberia, peopled by liberated negro slaves from North America; and who, bringing with them the Anglo-American civilisation, give promise of founding a cultured and prosperous community.

there is "left not a rack behind." The sepulchres alone of her departed kings have fulfilled their destination of surviving the habitations which their philosophy taught them to consider but as inns, and are now fast mouldering into dust. Scarcely a trace of a palace or a temple is to be seen.'

* Schlosser's (F. C.) Universalhistorische Uebersicht der Geschichte der Alten Welt und ihrer Cultur.

MONGOLIAN HISTORY—THE CHINESE.

As from the great central mass of mankind, the first accumulation of life on our planet, there was parted off into Africa a fragment called the Negro variety, so into eastern Asia there was detached, by those causes which we seek in vain to discover, a second huge fragment to which has been given the name of the Mongolian variety. Overspreading the great plains of Asia, from the Himalehs to the Sea of Okhotsk, this detachment of the human species may be supposed to have crossed into Japan; to have reached the other islands of the Pacific, and either through these, or by the access at Behring's Straits, to have poured themselves through the great American continent; their peculiarities shading off in their long journey, till the Mongolian was converted into the American Indian. Blumenbach, however, erects the American Indian into a type by himself, as already shown in No. 31.

Had historians been able to pursue the Negro race into their central African jungles and deserts, they would no doubt have found the general Ethiopic mass breaking up there under the operation of causes connected with climate, soil, food, &c. into vast sections or subdivisions, presenting marked differences from each other; and precisely so was it with the Mongolians. In Central Asia, we find them as Thibetians, Tungusians, Mongols proper; on the eastern coasts, as Mantchous and Chinese; in the adjacent islands, as Japanese, &c.; and nearer the North Pole, as Laplanders, Esquimaux, &c.; all presenting peculiarities of their own. Of these great Mongolian branches circumstances have given a higher degree of development to the Chinese and the Japanese than to the others, which are chiefly nomadic hordes, some under Chinese rule, others independent, roaming over the great pasture lands of Asia, and employed in rearing cattle.

There is every reason to believe that the vast population inhabiting that portion of eastern Asia called China, can boast of a longer antiquity of civilisation than almost any other nation of the world; a civilisation, however, differing essentially in its character from those which have appeared and disappeared among the Caucasians. This, in fact, is to be observed as the grand difference between the history of the Mongolian and that of the Caucasian variety of the human species, that whereas the former presents us with the best product of Mongolian humanity, in the form of one great permanent civilisation—the Chinese—extending from century to century, one, the same, and solitary, through a period of 3000 or 4000 years; the latter exhibits a succession of civilisations—the Chaldæan, the Persian, the Grecian, the Roman, the modern European (subdivided into French, English, German, Italian, &c.), and the Anglo-American; these civilisations, from the remotest Oriental—that is, Chaldæan—to the most

recent occidental—that is, the Anglo-American—being a series of waves falling into each other, and driven onward by the same general force. A brief sketch of Chinese history, with a glance at Japan, will therefore discharge all that we owe to the Mongolian race.

Authentic Chinese history does not extend farther back than about 800 or 1000 years B.C.; but, as has been the case more or less with all nations, the Chinese imagination had provided itself with a mythological history extending many ages back into the unknown past. Unlike the mythology of the Greeks, but like that of the Indians, the Chinese legends deal in large chronological intervals. First of all, in the beginning of time, was the great Puan-Koo, the founder of the Chinese nation, and whose dress was green leaves. After him came Ty-en-Hoang, Ti-Hoang, Gin-Hoang, and several other euphonious potentates, each of whom did something great towards the building up of the Chinese nation, and each of whom reigned, as was the custom in these grand old times, thousands of years. At length, at a time corresponding to that assigned in Scripture to the life of Noah, came the divine-born Fohi, a man of transcendent faculties, who reigned 115 years, teaching music and the system of symbols, instituting marriage, building walls round cities, creating mandarins, and, in short, establishing the Chinese nation on a basis that could never be shaken. After him came Shin-ning, Whang-ti, &c. until in due time came the good emperors Yao and Shun, in the reign of the latter of whom happened a great flood. By means of canals and drains the assiduous Yu saved the country, and became the successor of Shun. Yu was the first emperor of the Hia dynasty, which began about 2100 B.C. After this dynasty came that of *Shang*, the last of whose emperors, a great tyrant, was deposed (B.C. 1122) by Woo-wong, the founder of the Tchow dynasty.

In this Tchow dynasty, which lasted upwards of 800 years, authentic Chinese history commences. It was during it, and most probably about the year B.C. 484, that the great Con-fu-tse, or Confucius, the founder of the Chinese religion, philosophy, and literature, flourished. In the year B.C. 248, the Tchow dynasty was superseded by that of Tsin, the first of whose kings built the Great Wall of China, to defend the country against the Tartar nomads. The Tsin dynasty was a short one: it was succeeded in B.C. 206 by the Han dynasty, which lasted till A.D. 238. Then followed a rapid series of dynastic revolutions, by which the nation was frequently broken into parts; and during which the population was considerably changed in character by the irruptions of the nomad hordes of Asia who intermingled with it. Early in the seventh century, a dynasty called that of Tang acceded to power, which ended in 897. After half a century of anarchy, order was restored under the Song dynasty, at the commencement of which, or about the year 950, the art of printing was discovered, five centuries before it was known in Europe. 'The Song dynasty,' says Schlosser, 'maintained an intimate connection with Japan, as contrary to all Chinese maxims; the emperors of this dynasty imposed no limits to knowledge, the arts, life, luxury, and commerce with other nations. Their unhappy fate, therefore (on being extinguished with circumstances of special horror by the Mongol conqueror Kublai Khan, A.D. 1281), is held forth as a warning against departing a hairsbreadth from the old customs of the empire. From the time of the destruction of the Song dynasty by the Mongol monarchy, the intercourse between China and Japan was broken, until again the Ming, a native Chinese dynasty (A.D. 1366) restored it. The Mongol rulers made an expedition against Japan, but were unsuccessful. The unfortunate gift which the Japanese received from China was the doctrine of Foë. This doctrine, however, was not the first foreign doctrine or foreign worship that came into China. A religion, whose nature we cannot fix—probably Buddhism, ere it had assumed the form of Lamaism—was preached in it at an earlier date. About the time of the Tsin dynasty (B.C. 248–206), a warlike king had incorporated all China into one, and subdued the princes of the various provinces. While he was at war with his subjects, many of the roving hordes to the north of China pressed into the land, and with them appeared missionaries of the religion above-mentioned. When peace was restored, the kings of the fore-named dynasty, as also later those of Han and the two following dynasties, extended the kingdom prodigiously, and the western provinces became known to the Greeks and Romans as the land of the *Zerer*. As on the one side Tartary was at that time Chinese, so on the other side the Chinese were connected with India; whence came the Indian religion. It procured many adherents, but yielded at length to the primitive habits of the nation. In consequence of the introduction of the religion of Foë, the immense country fell asunder into two kingdoms. The south and the north had each its sovereign; and the wars of the northern kingdom occasioned the wanderings of the Huns, by whose agency the Roman Empire was destroyed. These kingdoms of the north and south were often afterwards united and again dissevered; great savage hordes roamed around them as at present; but all that had settled, and that dwelt within the Great Wall, submitted to the ancient Chinese civilisation. Ghenghis Khan, indeed, whose power was founded on the Turkish and Mongol races, annihilated both kingdoms, and the barbaric element seemed to triumph; but this was changed as soon as his kingdom was divided. Even Kublai, and yet more his immediate followers, much as the Chinese calumniate the Mongol dynasty of Yeven, maintained everything in its ancient condition, with the single exception that they did homage to Lamaism, the altered form of Buddhism. This religion yet prevails, accommodated skilfully, however, to the Chinese mode of existence—a mode which all subsequent conquerors have respected, as the example of the present dynasty proves.' The dynasty here alluded to is that of *Tatsin*, of Mantchou, a mixed Mongol and Tartar stock, which superseded the native Chinese dynasty of Ming in the year 1644. The present emperor of China is the sixth of the Tatsin dynasty.

From the series of dry facts just given, we arrive at the following definition of China and its civilisation:—As the Roman Empire was a great temporary aggregation of matured Caucasian humanity, surrounded by and shading off into Caucasian barbarism, so China, a country more extensive than all Europe, and inhabited by a population of more than 300,000,000, is an aggregation of matured Mongolian humanity surrounded by Mongolian barbarism. The difference is this, that while the Roman Empire was only one of several successive aggregations of the Caucasian race, each on an entirely different basis, the Chinese empire has been one permanent exhibition of the only form of civilisation possible among the Mongolians. The Jew, the Greek, the Roman, the Frenchman, the German, the Englishman—these are all types of the matured Caucasian character; but a fully-developed Mongolian has but one type—the Chinese. Chinese history does not exhibit a progress of the Mongolian man through a series of stages: it exhibits only a uniform duration of one great civilised Mongolian empire, sometimes expanding so as to extend itself into the surrounding Mongolian barbarism, sometimes contracted by the pressure of that barbarism, sometimes disturbed by infusions of the barbaric element, and sometimes shattered within itself by the operation of individual Chinese ambition, but always retaining its essential character. True, in such a vast empire, difference of climate, &c. must give rise to specific differences, so that a Chinese of the north-east is not the same as a Chinese of the south-west; true, also, the Japanese civilisation seems to exist as an alternative, between which and the Chinese Providence might share the Mongolian part of our species were it to remain unmixed; still the general remark remains undeniable, that from the extremest antiquity to the present day, Mongolian humanity has been able to cast itself but into one essential civilised type. It is an

object of peculiar interest, therefore, to us who belong to the multiform and progressive Caucasian race, to obtain a distinct idea of the nature of that permanent form of civilisation out of which our Mongolian brothers have never issued, and apparently never wish to issue. Each of our readers being a civilised Caucasian, may be supposed to ask, 'What sort of a human being is a civilised Mongolian?' A study of the Chinese civilisation would answer this question. Not so easy would it be for a Chinese to return the compliment, confused as he would be by the multiplicity of the types which the Caucasian man has assumed—from the ancient Arab to the modern Anglo-American.

Hitherto little progress has been made in the investigation of the Chinese civilisation. Several conclusions of a general character have, however, been established. 'We recognise,' says Schlosser, 'in the institutions of the Chinese, so much praised by the Jesuits, the character of the institutions of all early states; with this difference, that the Chinese mode of life is not a product of hierarchical or theocratic maxims, but a work of the cold understanding. In China, all that subserves the wants of the senses was arranged and developed in the earliest ages; all that concerns the soul or the imagination is yet raw and ill-adjusted; and we behold in the high opinion which the Chinese entertain of themselves and their affairs, a terrible example of what must be the consequence when all behaviour proceeds according to prescribed etiquette, when all knowledge and learning is a matter of rote directed to external applications, and the men of learning are so intimately connected with the government, and have their interest so much *one* with it, that a number of privileged doctors can regulate literature as a state magistrate does weights and measures.' Of the Chinese government the same authority remarks—'The patriarchal system still lies at the foundation of it. Round the "Son of Heaven," as they name the highest ruler, the wise of the land assemble as round their counsellor and organ. So in the provinces (of which there are eighteen or nineteen, each as large as a considerable kingdom), the men of greatest sagacity gather round the presidents; each takes the fashion from his superior, and the lowest give it to the people. Thus one man exercises the sovereignty; a number of learned men gave the law, and invented in very early times a symbolical system of syllabic writing, suitable for their monosyllabic speech, in lieu of their primitive system of hieroglyphics. All business is transacted in writing, with minuteness and pedantry. Their written language is very difficult; and as it is possible in Chinese writing for one to know all the characters of a certain period of time, or of a certain department, and yet be totally unacquainted with those of another period or another department, there is no end to their mechanical acquisition.' It has already been mentioned that Chinese thought has at various times received certain foreign tinctures, chiefly from India; essentially, however, the Chinese mind has remained as it was fixed by Confucius. 'In China,' says Schlosser, 'a so-named philosophy has accomplished that which in other countries has been accomplished by priests and religions. In the genuine Chinese books of religion, in all their learning and wisdom, God is not thought of; religion, according to the Chinese and their oracle and lawgiver Con-fu-tse, has nothing to do with the imagination, but consists alone in the performance of outward moral duties, and in zeal to further the ends of state. Whatever lies beyond the plain rule of life is either a sort of obscure natural philosophy, or a mere culture for the people, and for any who may feel the want of such a culture. The various forms of worship which have made their way into China are obliged to restrict themselves, to bow to the law, and to make their practices conform: they can arrogate no literature of their own; and, good or bad, must learn to agree with the prevailing atheistic Chinese manner of thought.'

Such are the Chinese, and such have they been for 2000 or 3000 years—a vast people undoubtedly civilised to the highest pitch of which Mongolian humanity is susceptible; of mild disposition; industrious to an extraordinary degree; well-skilled in all the mechanical arts, and possessing a mechanical ingenuity peculiar to themselves; boasting of a language quite singular in its character, and of a vast literature; respectful of usage to such a degree as to do everything by pattern; attentive to the duties and civilities of life, but totally devoid of fervour, originality, or spirituality; and living under a form of government which has been very happily designated a pedantocracy—that is, a hierarchy of erudite persons selected from the population, and appointed by the emperor, according to the proof they give of their capacity, to the various places of public trust. How far these characteristics, or any of them, are *inseparable* from a Mongolian civilisation, would appear more clearly if we knew more of the Japanese. At present, however, there seems little prospect of any reorganisation of the Chinese mind, except by means of a Caucasian stimulus applied to it. And what Caucasian stimulus will be sufficient to break up that vast Mongolian mass, and lay it open to the general world-influences? Will the stimulus come from Europe; or from America, after its western shores are peopled, and the Anglo-Americans begin to think of crossing the Pacific?

CAUCASIAN HISTORY.

While the Negro race seems to have retrograded from its original position on the earth, while the Mongolian has afforded the spectacle of a single permanent and pedantic civilisation retaining millions within its grasp for ages in the extreme east of Asia, the Caucasian, as if the seeds of the world's progress had been implanted in it, has worked out for itself a splendid career on an ever-shifting theatre. First attaining its maturity in Asia, the Caucasian civilisation has shot itself westward, if we may so speak, in several successive throes; long confined to Asia; then entering northern Africa, where, commingling with the Ethiopian, it originated a new culture; again, about the year B.C. 1000, adding Europe to the stage of history; and lastly, 2500 years later, crossing the Atlantic, and meeting in America with a diffused and degenerate Mongolism. To understand this beautiful career thoroughly, it is necessary to observe the manner in which the Caucasians disseminated themselves from their central home—to count, as it were, and note separately, the various flights by which they emigrated from the central hive. So far as appears, then, from investigations into language, &c. the Caucasian stock sent forth at different times in the remote past five great branches from its original seat, somewhere to the south of that long chain of mountains which commences at the Black Sea, and, bordering the southern coast of the Caspian, terminates in the Himalehs. In what precise way, or at what precise time, these branches separated themselves from the parent stock and from each other, must remain a mystery; a sufficiently clear general notion of the fact is all that we can pretend to. 1*st*, The Armenian branch, remaining apparently nearest the original seat, filled the countries between the Caspian and Black Seas, extending also round the Caspian into the territories afterwards known as those of the Parthians. 2*d*, The Indo-Persian branch, which extended itself in a southern and eastern direction from the Caspian Sea, through Persia and Cabool, into Hindoostan, also penetrating Bokhara. From this great branch philologists and ethnographers derive those two races, the distinction between which, although subordinate to the grand fivefold division of the Caucasian stock, is of immense consequence in modern history—the Celtic and the Germanic. Pouring through Asia Minor, it is supposed that the Indo-Persian family entered Europe through Thrace, and ultimately, through the operation of those innumerable causes which react upon the human constitution from the circumstances in which it is placed, assumed the character of Celts and Germans—the Celts being the earlier product, and eventually occupying the

western portion of Europe—namely, northern Italy, France, Spain, and Great Britain—still undergoing subdivision, however, during their dispersion into Iberians, Gaels, Cymri, &c.; the Germans being a later off-shoot, and settling rather in the centre and north of Europe in two great moieties—the Scandinavians and the Germans Proper. This seems the most plausible pedigree of the Celtic and Germanic races, although some object to it. *3d*, The Semitic or Aramaic branch, which, diffusing itself southward and westward from the original Caucasian seat, filled Syria, Mesopotamia, Arabia, &c. and founded the early kingdoms of Assyria, Babylonia, Phœnicia, Palestine, &c. It was this branch of the Caucasian variety which, entering Africa by the Isthmus of Suez and the Straits of Babelmandeb, constituted itself an element at least in the ancient population of Egypt, Nubia, and Abyssinia; and there are ethnographers who believe that the early civilisation which lined the northern coasts of Africa arose from some extremely early blending of the Ethiopic with the Semitic, the latter acting as a dominant caste. Diffusing itself westward along the African coast as far as Mauritania, the Semitic race seems eventually, though at a comparatively late period, to have met the Celtic, which had crossed into Africa from Spain; and thus, by the infusion of Arameans and Celts, that white or tawny population which we find in northern Africa in ancient times, distinct from the Ethiopians of the interior, seems to have been formed. *4th*, The Pelasgic branch, that noble family which, carrying the Greeks and Romans in its bosom, poured itself from western Asia into the south-east of Europe, mingling doubtless with Celts and Germans. *5th*, The Scythian, or Slavonic branch, which diffused itself over Russia, Siberia, and the central plains of Asia, shading off in these last into the Mongolian.

Such is a convenient division of the Caucasian stock; a more profound investigation, however, might reduce the five races to these two—the Semitic and the Indo-Germanic; all civilised languages being capable, it is said, of being classified under these three families—the Chinese, which has monosyllabic roots; the Indo-Germanic (Sanscrit, Hindoostanee, Greek, Latin, German, and all modern European languages), which has dissyllabic roots; and the Semitic (Hebrew, Arabic, &c.), whose roots are trisyllabic. Retaining, however, the fivefold distribution which we have adopted, we shall find that the history of the world, from the earliest to the remotest times, has been nothing else than the common Caucasian vitality presenting itself in a succession of phases or civilisations, each differing from the last in the proportions in which it contains the various separate elements.

It is advisable to sketch first the most eastern Caucasian civilisation—that is, that of India; and then to proceed to a consideration of the state of that medley of nations, some of them Semitic, some of them Indo-Persian, and some of them Armenian, out of which the great Persian empire arose, destined to continue the historic pedigree of the world into Europe, by transmitting its vitality to the Pelasgians.

Ancient India.

One of the great branches, we have said, of the Caucasian family of mankind was the Indo-Persian, which, spreading out in the primeval times from the original seat of the Caucasian part of the human species, extended itself from the Caspian to the Bay of Bengal, where, coming into contact with the southern Mongolians, it gave rise, according to the most probable accounts, to those new mixed Caucasian-Mongolian races, the Malays of the Eastern Peninsula; and, by a still farther degeneracy, to the Papuas, or natives of the South Sea Islands. While thus shading off into the Mongolism of the Pacific, the Indo-Persian mass of our species was at the same time attaining maturity within itself; and as the first ripened fragment of the Mongolians had been the Chinese nation, so one of the first ripened fragments of the Indo-Persian branch of the Caucasians seems to have been the Indians. At what time the vast peninsula of Hindoostan could first boast of a civilised population, it is impossible to say; all testimony, however, agrees in assigning to Indian civilisation a most remote antiquity. Another fact seems also to be tolerably well authenticated regarding ancient India; namely, that the northern portions of it, and especially the north-western portions, which would be nearest the original Caucasian seat, were the first civilised; and that the civilising influence spread thence southwards to Cape Comorin.

Notwithstanding this general conviction, that India was one of the first portions of the earth's surface that contained a civilised population, few facts in the ancient history of India are certainly known. We are told, indeed (to omit the myths of the Indian Bacchus and Hercules), of two great kingdoms—those of Ayodha (Oude) and Prathisthana (Vitera)—as having existed in northern India upwards of a thousand years before Christ; of conquests in southern India, effected by the monarchs of these kingdoms; and of wars carried on between these monarchs and their western neighbours the Persians, after the latter had begun to be powerful. All these accounts, however, merely resolve themselves into the general information, that India, many centuries before Christ, was an important member in the family of Asiatic nations; supplying articles to their commerce, and involved in their agitations. Accordingly, if we wish to form an idea of the condition of India prior to that great epoch in its history—its invasion by Alexander the Great, B.C. 326—we can only do so by reasoning back from what we know of its present condition, allowing for the modifying effects of the two thousand years which have intervened; and especially for the effects produced by the Mohammedan invasion, A.D. 1000. This, however, is the less difficult in the case of such a country as India, where the permanence of native institutions is so remarkable; and though we cannot hope to acquire a distinct notion of the territorial divisions, &c. of India in very ancient times, yet, by a study of the Hindoos as they are at present, we may furnish ourselves with a tolerably accurate idea of the nature of that ancient civilisation which overspread Hindoostan many centuries before the birth of Christ—and this all the more probably that the notices which remain of the state of India at the time of the invasion of Alexander, correspond in many points with what is to be seen in India at the present day.

The population of Hindoostan, the area of which is estimated at about a million square miles, amounts to about 120,000,000; of whom about 100,000,000 are Hindoos or aborigines, the remainder being foreigners, either Asiatic or European. The most remarkable feature in Hindoo society is its division into castes. The Hindoos are divided into four great castes—the *Brahmins*, whose proper business is religion and philosophy; the *Kshatriyas*, who attend to war and government; the *Vaisyas*, whose duties are connected with commerce and agriculture; and the *Sudras*, or artisans and labourers. Of these four castes the Brahmins are the highest; but a broad line of distinction is drawn between the Sudras and the other three castes. The Brahmins may intermarry with the three inferior castes—the Kshatriyas with the Vaisyas and the Sudras; and the Vaisyas with the Sudras; but no Sudra can choose a wife from either of the three superior castes. As a general rule, every person is required to follow the profession of the caste to which he belongs: thus the Brahmin is to lead a life of contemplation and study, subsisting on the contributions of the rich; the Kshatriya is to occupy himself in civil matters, or to pursue the profession of a soldier; and the Vaisya is to be a merchant or a farmer. In fact, however, the barriers of caste have in innumerable instances been broken down. The ramifications, too, of the caste system are infinite. Besides the four pure, there are numerous mixed castes, all with their prescribed ranks and occupations. A class far below even the pure Sudras is the *Pariahs* or outcasts; consisting of the refuse of all the

other castes, and which, in process of time, has grown so large as to include, it is said, one-fifth of the population of Hindoostan. The Pariahs perform the meanest kinds of manual labour. This system of castes, of which the Brahmins themselves, whom some suppose to have been originally a conquering race, are the architects, if not the founders, is bound up with the religion of the Hindoos. Indeed of the Hindoos, more truly than of any other people, it may be said that a knowledge of their religious system is a knowledge of the people themselves.

The Vedas, or ancient sacred books of the Hindoos, distinctly set forth the doctrine of the Infinite and Eternal Supreme Being. According to the Vedas, there is 'one unknown, true Being, all present, all powerful, the creator, preserver, and destroyer of the universe.' This Supreme Being 'is not comprehensible by vision, or by any other of the organs of sense; nor can he be conceived by means of devotion or virtuous practices.' He is not space, nor air, nor light, nor atoms, nor soul, nor nature: he is above all these, and the cause of them all. He 'has no feet, but extends everywhere; has no hands, but holds everything; has no eyes, yet sees all that is; has no ears, yet hears everything that passes. His existence had no cause. He is the smallest of the small and the greatest of the great; and yet is, in fact, neither small nor great.' Such is the doctrine of the Vedas in its purest and most abstract form; but the prevailing theology which runs through them is what is called *Pantheism*, or that system which speaks of God as the soul of the universe, or as the universe itself. Accordingly, the whole tone and language of the highest Hindoo philosophy is Pantheistic. As a rope, lying on the ground, and mistaken at first view for a snake, is the cause of the idea or conception of the snake which exists in the mind of the person looking at it, so, say the Vedas, is the Deity the cause of what we call the universe. 'In him the whole world is absorbed; from him it issues; he is entwined and interwoven with all creation.' 'All that exists is God: whatever we smell, or taste, or see, or hear, or feel, is the Supreme Being.'

This one incomprehensible Being, whom the Hindoos designate by the mystical names *Om*, *Tut*, and *Jut*, and sometimes also by the word *Brahm*, is declared by the Vedas to be the only proper object of worship. Only a very few persons of extraordinary gifts and virtues, however, are able, it is said, to adore the Supreme Being—the great OM—directly. The great majority of mankind are neither so wise nor so holy as to be able to approach the Divine Being himself, and worship him. It being alleged that persons thus unfortunately disqualified for adoring the invisible Deity should employ their minds upon some visible thing, rather than suffer them to remain idle, the Vedas direct them to worship a number of inferior deities, representing particular acts or qualities of the Supreme Being; as, for instance, Crishnu or Vishnu, the god of preservation; Muhadev, the god of destruction; or the sun, or the air, or the sea, or the human understanding; or, in fact, any object or thing which they may choose to represent as God. Seeing, say the Hindoos, that God pervades and animates the whole universe, everything, living or dead, may be considered a portion of God, and as such, it may be selected as an object of worship, provided always it be worshipped only as constituting a portion of the Divine Substance. In this way, whatever the eye looks on, or the mind can conceive, whether it be the sun in the heavens or the great river Ganges, or the crocodile on its banks, or the cow, or the fire kindled to cook food, or the Vedas, or a Brahmin, or a tree, or a serpent—all may be legitimately worshipped as a fragment, so to speak, of the Divine Spirit. Thus there may be many millions of gods to which Hindoos think themselves entitled to pay divine honours. The number of Hindoo gods is calculated at 330,000,000, or about three times the number of their worshippers.

Of these, the three principal deities of the Hindoos are Brahma the creator, Vishnu the preserver, and Seeb or Siva the destroyer. These three of course were originally intended to represent the three great attributes of the Om or Invisible Supreme Being—namely, his creating, his preserving, and his destroying attributes. Indeed the name OM itself is a compound word, expressing the three ideas of creation, preservation, and destruction, all combined. The three together are called *Trimurti*, and there are certain occasions when the three are worshipped conjointly. There are also sculptured representations of the Trimurti, in which the busts of Brahma, Vishnu, and Siva are cut out of the same mass of stone. One of these images of the Trimurti is found in the celebrated cavern temple of Elephanta, in the neighbourhood of Bombay, perhaps the most wonderful remnant of ancient Indian architecture. Vishnu and Siva are more worshipped separately than Brahma—each having his body of devotees specially attached to him in particular.

Hindooism, like other Pantheistic systems, teaches the doctrine of the transmigration of souls: all creation, animate and inanimate, being, according to the Hindoo system, nothing else but the deity Brahm himself parcelled out, as it were, into innumerable portions and forms (when these are reunited, the world will be at an end), just as a quantity of quicksilver may be broken up into innumerable little balls or globules, which all have a tendency to go together again. At long intervals of time, each extending over some thousand millions of years, Brahm does bring the world to an end, by reabsorbing it into his spirit. When, therefore, a man dies, his soul, according to the Hindoos, must either be absorbed immediately into the soul of Brahm, or it must pass through a series of transmigrations, waiting for the final absorption, which happens at the end of every universe, or at least until such time as it shall be prepared for being reunited with the Infinite Spirit. The former of the two is, according to the Hindoos, the highest possible reward: to be absorbed into Brahm immediately upon death, and without having to undergo any farther purification, is the lot only of the greatest devotees. To attain this end, or at least to avoid degradation after death, the Hindoos, and especially the Brahmins, who are naturally the most intent upon their spiritual interests, practise a ritual of the most intricate and ascetic description, carrying religious ceremonies and antipathies with them into all the duties of life. So overburdened is the daily life of the Hindoos with superstitious observances with regard to food, sleep, &c. that, but for the speculative doctrines which the more elevated minds among the Brahmins may see recognised in their religion, the whole system of Hindooism might seem a wretched and grotesque polytheism.

A hundred millions of people professing this system, divided into castes as now, and carrying the Brahminical ritual into all the occupations of lazy life under the hot sun, and amid the exuberant vegetation of Hindoostan—such was the people into which Alexander the Great carried his conquering arms; such, doubtless, they had been for ages before that period; and such did they remain, shut out from the view of the rest of the civilised world, and only communicating with it by means of spices, ivory, &c. which found their way through Arabia or the Red Sea to the Mediterranean, till Vasco de Gama rounded the Cape of Good Hope, and brought Europe and India into closer connection. Meanwhile a Mohammedan invasion had taken place (A.D. 1000); Mohammedans from Persia had mingled themselves with the Hindoos; and it was with this mixed population that British enterprise eventually came into collision.

Ere quitting the Indians, it is well to glance back at the Chinese, so as to see wherein these two primeval and contemporaneous consolidations of our species—the Mongolian consolidation of eastern Asia, and the Caucasian consolidation of the central peninsula of southern Asia—differ. 'Whoever would perceive the full physical and moral difference,' says Klaproth,

'between the Chinese and Indian nations, must contrast the peculiar culture of the Chinese with that of the Hindoo, fashioned almost like a European, even to his complexion. He will study the boundless religious system of the Brahmins, and oppose it to the bold belief of the original Chinese, which can hardly be named religion. He will remark the rigorous division of the Hindoos into castes, sects, and denominations, for which the inhabitants of the central kingdom have even no expression. He will compare the dry prosaic spirit of the Chinese with the high poetic soul of the dwellers on the Ganges and the Daumnah. He will hear the rich and blooming Sanscrit, and contrast it with the unharmonious speech of the Chinese. He will mark, finally, the literature of the latter, full of matters of fact and things worth knowing, as contrasted with the limitless philosophic-ascetic writing of the Indians, who have made even the highest poetry wearisome by perpetual length.'

History of the Eastern Nations till their Incorporation in the Persian Empire.

Leaving India—that great fragment of the original Caucasian civilisation—and proceeding westward, we find two large masses of the human species filling in the earliest times the countries lying between the Indus and the Mediterranean—namely, an Indo-Persian mass filling the whole tract of country between the Indus and the Tigris; and a Semitic-Aramaic mass filling the greater part of lesser Asia and the whole peninsula of Arabia, and extending itself into the parts of Africa adjoining the Red Sea. That in the most remote ages these lands were the theatres of a civilised activity is certain, although no records have been transmitted from them to us, except a few fragments relative to the Semitic nations. The general facts, however, with regard to these ante-historic times, seem to be: 1*st*, That the former of the two masses mentioned—namely, the population between the Indus and the Caspian—was essentially a prolongation of the great Indian nucleus, possessing a culture similar to the Indian in its main aspects, although varied, as was inevitable, by the operation of those physical causes which distinguish the climate of Persia and Cabool from that of Hindoostan; 2*d*, That the Semitic or Aramaic mass divided itself at a very early period into a number of separate peoples or nations, the Assyrians, the Babylonians, the Phœnicians, the Jews, the Arabians, &c. and that each of these acquired a separate development, and worked out for itself a separate career; 3*d*, That upwards of a thousand years before Christ the spirit of conquest appeared among the Semitic nations, dashing them violently against each other; and that at length one Semitic fragment—that is, the Assyrians—attained the supremacy over the rest, and founded a great dominion, called the Assyrian empire, which stretched from Egypt to the borders of India (B. C. 800); and 4*th*, That the pressure of this Semitic power against the Indo-Persic mass was followed by a reaction—one great section of the Indo-Persians rising into strength, supplanting the Assyrian empire, and founding one of their own, called the Persian empire (B. C. 536), which was destined in its turn to be supplanted by the confederacy of Grecian states in B. C. 326.

Beginning with Egypt, let us trace separately the career of each of the Eastern nations till that point of time at which we find them all embodied in the great Persian empire:—

The Egyptians.

Egypt, whose position on the map of Africa is well known, is about 500 miles long from its most northern to its most southern point. Through its whole length flows the Nile, a fine large stream rising in the inland kingdom of Abyssinia, and, from certain periodic floods to which it is subject, of great use in irrigating and fertilising the country. A large portion of Egypt consists of an alluvial plain, similar to our meadow grounds, formed by the deposits of the river, and bounded by ranges of mountains on either side. The greatest breadth of the valley is 150 miles, but generally it is much less, the mountain ranges on either side often being not more than five to ten miles from the river.

A country so favourably situated, and possessing so many advantages, could not but be among the earliest peopled; and accordingly, as far back as the human memory can reach, we find a dense population of a very peculiar character inhabiting the whole valley of the Nile. These ancient Egyptians seem, as we have already said, to have been a mixture of the Semitic with the Ethiopic element, speaking a peculiar language, still surviving in a modified form in the Coptic of modern Egypt. In the ancient authors, however, the Egyptians are always distinguished from the Ethiopians, with whom they kept up so close an intercourse, that it has been made a question whether the Egyptian institutions came from the Ethiopian Meroe, or whether, as is more probable, civilisation was transmitted to Ethiopia from Egypt.

The whole country is naturally divided into three parts—Upper Egypt, bordering on what was anciently Ethiopia; Middle Egypt; and Lower Egypt, including the Delta of the Nile. In each there were numerous cities in which the population was amassed: originally Thebes, a city of Upper Egypt, of the size of which surprising accounts are transmitted to us, and whose ruins still astonish the traveller, was the capital of the country; but latterly, as commerce increased, Memphis in Middle Egypt became the seat of power. After Thebes and Memphis, Ombi, Edfou, Esneh, Elephantina, and Philoe seem to have been the most important of the Egyptian cities.

Our accounts of the Egyptian civilisation are derived chiefly from the Greek historian Herodotus (B. C. 408), who visited Egypt and digested the information which he received from the priests as to its ancient history; and Manetho, a native Egyptian of later times, who wrote in Greek. From their accounts it is inferred that the country was anciently divided into thirty-six sections or provinces called *nomes*—ten in Upper, sixteen in Middle, and ten in Lower Egypt. 'Many of the separate nomes were of considerable substantive importance, and had a marked local character each to itself, religious as well as political; though the whole of Egypt, from Elephantine to Pelusium and Kanopus, is said to have always constituted one kingdom.' Of this kingdom, the population, according to a rough estimate, may have been about seven millions. The government was a monarchy based on an all-powerful priesthood, similar to the Brahminical system of India; and, as in India, the most striking feature in the Egyptian society was the division of the people into hereditary castes. 'The population of Egypt,' says Mr Grote in his History of Greece, 'was classified into certain castes or hereditary professions, of which the number is represented differently by different authors. The priests stand clearly marked out as the order richest, most powerful, and most venerated, distributed all over the country, and possessing exclusively the means of reading and writing,* besides a vast amount of narrative matter treasured up in the memory, the whole stock of medical and physical knowledge then attainable, and those rudiments of geometry (or rather land-measuring) which were so often called into use in a country annually inundated. To each god and to each temple throughout Egypt, lands and other properties belonged, whereby the numerous band of priests attached to him were maintained. Their ascendancy, both direct and indirect, over the minds of the people was immense; they prescribed that minute ritual under which the life of every Egyptian, not excepting the king himself, was passed, and which was for themselves more full of harassing particularities than for any one else. Every day in the year belonged

* Mr Grote subjoins the following important note:—'The word *priest* conveys to a modern reader an idea very different from that of the Egyptian *iseis*, who were not a profession, but an order, *comprising many occupations and professions.*'

to some particular god, and the priests alone knew to which. There were different gods in every nome, though Isis and Osiris were common to all; and the priests of each god constituted a society apart, more or less important, according to the comparative celebrity of the temple. The property of each temple included troops of dependents and slaves, who were stamped with "holy marks," and who must have been numerous, in order to suffice for the service of the large buildings and their constant visitors.

Next in importance to the sacerdotal caste were the military caste or order, whose native name indicated that they stood on the left hand of the king, while the priests occupied the right. They were classified into Kalasiries and Hermotybii, who occupied lands in eighteen particular nomes or provinces, principally in Lower Egypt. The Kalasiries had once amounted to 160,000 men, the Hermotybii to 250,000, when at the maximum of their population; but that highest point had long been past in the time of Herodotus. To each man of this soldier-caste was assigned a portion of land, equal to about 6½ English acres, free from any tax. The lands of the priests and the soldiers were regarded as privileged property, and exempt from all burdens; while the remaining soil was considered as the property of the king, who, however, received from it a fixed proportion—one-fifth of the total produce—leaving the rest in the hands of the cultivators. The soldiers were interdicted from every description of art and trade.'

The other castes are differently given in different authors; the most probable account, however, is that which assigns them as three—the caste of the husbandmen, that of the artificers, and that of the herdsmen, which last caste included a variety of occupations held in contempt, the lowest and most degraded of all being that of swineherd. The separation between the husbandmen and the herdsmen seems to have arisen from the circumstance that different parts of the country, not suitable for agriculture, were entirely laid out in pasture. The artificers, constituting the vast town population of Egypt, were subdivided into a great variety of occupations, weavers, masons, sculptors, &c. who were compelled to these professions by hereditary obligation. It was by the labour of this vast town population, assisted by that of herds of slaves, that those huge works were accomplished, the remains of which still attest the greatness of ancient Egypt. Part of the artisan population were exclusively occupied in skilled labour; and in a country where there was such a taste for works of masonry, sculpture was necessarily one of the most largely-stocked of the skilled occupations. 'Perfect exactness of execution,' it is said, 'mastery of the hardest stone, and undeviating obedience to certain rules of proportion, are general characteristics of Egyptian sculpture. There are yet seen in their quarries obelisks not severed from the rock, but having three of their sides already adorned with hieroglyphics, so certain were they of cutting off the fourth side with precision.' These skilled artificers may be supposed to have acted as foremen and overseers of the great numbers of labourers who were employed in public works such as the Pyramids. In the construction of these works, no degree of labour for any length of time seems to have intimidated the Egyptians. The huge blocks of stone, sometimes weighing 1000 tons each, were dragged for hundreds of miles on sledges, and their transport, perhaps, did not occupy less time than a year; in one case which is known, 2000 men were employed three years in bringing a single stone from a quarry to the building in which it was to be placed. Usually, the sledges were drawn by men yoked in rows to separate ropes, all pulling at a ring fixed to the block. (See Vol. I. p. 404.) Where it was possible, the blocks were brought from the quarries on flat-bottomed boats on the Nile. But the transport of these masses was much more easily accomplished than the placing of them in elevated situations in the buildings. They were raised by the power of levers and inclined planes at immense trouble and cost. The waste of human life in these gigantic works must have been enormous. About 120,000 men are said to have perished in the digging of a canal, which was left unfinished, between the Red Sea and an arm of the Nile; and according to Herodotus, the Egyptian priests of his day described the building of the Pyramids as a time of extreme exhaustion and hardship to the whole country.

The religion of the Egyptians seems to have been, in its popular form at least, a mere gross Fetishism, whose principal characteristic was a worship of teeming animal life—the bull, the cat, the ibis, the crocodile, &c.; different animals in different nomes. Whatever profounder meaning lay hid under this gross ceremonial the priest-caste reserved to themselves, as one of the mysteries, the possession of which severed them from the rest of the population. Among these mysteries was the art of writing, which was practised both in the alphabetical and the hieroglyphic form; the latter being used for special purposes. Some vague notion of the immortality of the soul, resembling the Hindoo tenet of transmigration, seems to have pervaded the Egyptian religion; and this belief appears to have lain at the foundation of the Egyptian practice of embalming the dead. The business of embalming was a very dignified one, and was aided by a host of inferior functionaries, who made and painted coffins and other articles which were required. The bodies of the poorer classes were merely dried with salt or natron, and wrapt up in coarse cloths, and deposited in the catacombs. The bodies of the rich and great underwent the most complicated operations, wrapt in bandages dipped in balsam, and laboriously adorned with all kinds of ornaments. Thus prepared, they were placed in highly-decorated cases or coffins, and then consigned to sarcophagi in the catacombs or pyramids. Bodies so prepared have been called mummies, either from the Arabian word *momia*, or the Coptic *mum*, signifying bitumen or gum-resin.

Although the Egyptians carried on from early times a caravan-commerce with the adjacent countries of Phœnicia, Palestine, and Arabia, importing such articles as wine, oil, and spices for embalming, yet exclusiveness and self-sufficiency were characteristics of their civilisation. There, on the banks of the Nile, these millions lived, changeless in their methods through centuries, each individual mechanically pursuing the occupation to which he was born—millions cultivating the soil, and producing wheat, &c. for the subsistence of the whole; others tending the cattle necessary for food or sacrifice; millions, again, crowded into the numerous towns, occupied in the various handicrafts necessary to provide articles of clothing, luxury, &c.—a large proportion of this class being available for stupendous architectural works; and lastly, diffused through these country and town populations, two other proprietor-castes—the one a militia, occupied in gymnastic exercises alone; the other a sacerdotal or intellectual order, within whose body was accumulated all the speculative or scientific wisdom of the country. Relations existed between Egypt and the adjacent countries; and rumours of the nature of its peculiar civilisation may have spread through the nations of the Mediterranean; but for a long while it was shut, like the present China, against foreign intrusion; and it was not till about the year 650 B.C. that it was thrown open to general inspection. In the sixth and fifth centuries B.C., the philosophers of other countries, and especially of Greece, used to visit Egypt in order to acquire, by intercourse with the Egyptian intellectual caste, some of that precious knowledge of which they were believed to be the depositaries.

Although the Egyptian civilisation is known to have existed pretty much as we have described it from immemorial antiquity, yet, with the exception of what we learn from Scripture, we know little of Egyptian history, properly so called, anterior to the time when the country was thrown open to the Greeks. Herodotus and Manetho, indeed, have given us retrospective lists of the Egyptian kings, extending back into the primi-

tive gloom of the world; but portions of these lists are evidently constructed backwards on mythical principles. Thus Manetho, preserving doubtless the traditions of the sacerdotal Egyptian caste, to which he is supposed to have belonged, carries back the imagination as far as 30,000 years before the birth of Christ. From this date till B.C. 5702, great divine personages ruled in Egypt; then (B.C. 5702) it came into the possession of human kings, the first of which was Menes. From the accession of Menes down to the incorporation of Egypt with the Persian empire (B.C. 525), Herodotus assigns 330 kings, or, as they are called in Scripture, Pharaohs, whose names, he informs us, were read to him out of a papyrus manuscript by the Egyptian priests, who pledged themselves to its accuracy; and Manetho reckons up twenty-six dynasties, some of them native and others foreign, which divided the long period into portions of different lengths. The earlier of these dynasties are of course unhistorical, and are to be treated as Egyptian myths—that is, fictions of the peculiar Egyptian imagination, as the Greek stories of Prometheus, &c. were fictions of the peculiar Greek imagination. The later dynasties, however, are not to be thus dismissed. It was in the fifteenth of Manetho's dynasties, or B.C. 1920, that Abraham is supposed to have visited Egypt; and monuments remain which are referred to the sixteenth and seventeenth dynasties, during which it was that the Israelites remained in Egypt. These three dynasties were foreign ones, and are denominated the dynasties of the Hyksos, or shepherd kings—these shepherds being represented as a red-haired and blue-eyed race of invaders, who came from the Semitic countries in the north-east. The shepherd kings are said to have destroyed the monuments of the previous dynasties. At length they were expelled by a native dynasty of Thebans, the eighteenth in Manetho's list, and the head of which is supposed to have been the Pharaoh 'who knew not Joseph.' The exodus of the Israelites from Egypt is believed to have taken place B.C. 1491, under the reign of the Pharaoh of the eighteenth dynasty, named Thothmes III.—the Pharaoh whose heart was hardened, and who was drowned in the Red Sea. This Theban dynasty produced many able sovereigns; one of whom, Rameses II., was a great conqueror, and extended the Egyptian dominion far into Asia. The nineteenth and twentieth dynasties were likewise from Thebes; the twenty-first were Tanites; the twenty-second, Babastites; the twenty-third, Tanites again; the twenty-fourth, Saites, from Sais in Lower Egypt; the twenty-fifth (B. C. 812) was an Ethiopian dynasty, during whose rule there were frequent wars with the Assyrians. The twenty-sixth dynasty, which succeeded the Ethiopian one after a period of anarchy, was from Sais. The first of its kings was Psammetichus I., whose reign (B.C. 650) constitutes an epoch in Egyptian history. Having attained to the throne by the aid of Greek mercenaries, he broke down the barriers which Egyptian exclusiveness had hitherto kept up against foreigners, greatly to the disgust of many of his subjects, especially of the priestly caste, whose trammels in other respects he threw off, and of the military caste, who found their places occupied by Ionian and Karian colonists. The successors of Psammetichus involved themselves in war with the Chaldeans or Assyrians of Babylon. The fourth of them, named Amasis (B.C. 570-526), rivalled Psammetichus in liberality of policy. 'Besides granting permission,' says Mr Grote, 'to various Grecian towns to erect religious establishments for such of their citizens as visited the Greek port of Naukratis, he also sanctioned the constitution of a formal and organised emporium or factory, invested with commercial privileges, and armed with authority exercised by presiding officers regularly chosen.' To this important establishment was given the name of *the Hellênion*; just as if, at a hitherto close port of China, an institution were to be permitted to be called 'The British Factory.' Under Amasis, Egypt attained to a great degree of prosperity, which was remembered the more that immediately after his death the country was subjugated by Cambyses, and annexed to the Persian empire (B.C. 525).

Arabia.

The great peninsula of Arabia was in the earliest times inhabited by a population of the Semitic stock, in all essential respects similar to that which inhabits it now, partly concentrated in cities, partly wandering in tribes through the extensive deserts which mark the surface of the country. The inhabitants of the towns subsist by agriculture and commerce; the wandering tribes by cattle-rearing and pillage. In ancient times, as now, the Arabs were celebrated for their expert horsemanship, their hospitality, their eloquence, and their free indomitable spirit. In religion, however, the modern Arabs, who are Mohammedans, differ from the ancient Arabs, who were idolaters, chiefly worshippers of the celestial luminaries, nowhere so beautiful as in the sky of an Arabian desert. The Arabs themselves trace their history back, the older tribes to Kahtan (the Joktan of the 10th chapter of Genesis), the later to Adnan, a descendant of Ishmael the offspring of Abraham. It is unnecessary, however, to enter into this history, as Arabia was not incorporated with the Persian empire, and only assumed historical importance in later times, when it sent forth the religion of Mohammed over the East. (See Nos. 56 and 76.)

Syria.

The Semitic or Aramaic population overspreading Syria—which name is generally applied to the country lying between the Euphrates and Arabian desert on the east, and the Mediterranean on the west—had early divided itself into various independent states or kingdoms, which ultimately resolved themselves, it would appear, into three. These were *Phœnicia*, a narrow strip of coast-land, extending from Mount Carmel to the river Elentheros; *Palestine*, or the *Holy Land*, including the country south of Phœnicia, between the Arabian desert and the Mediterranean, as well as the inland district lying between Mount Carmel and Mount Herman; and *Syria Proper*, whose capital was Damascus, and which, when the power of the Damascan kings was at its highest, included all the country except Palestine and Phœnicia. Syrian history possesses no independent importance; we pass, therefore, to the history of the Phœnician and Jewish nations.

The Phœnicians.

Phœnicia was an exceedingly small country, its length being only about 120 miles, and its breadth nowhere greater than 20 miles. Indeed it may be described as a mere slip of coast-land, sufficiently large to accommodate a range of port towns, such as a merchant people required. The most northern of these Phœnician cities was Aradus, situated on a small island; the most southern was the famous Tyre; and between the two were situated many others, of which the chief were Sidon, Berytus, Tripolis, and Byblus. The greater part of the population was contained in these cities, the rural population being small in proportion.

Originally, Phœnicia was divided into a number of little states or communities, each having a town for its metropolis, with a hereditary king of its own; and ere the country was restricted by the formation of the Jewish nation, the number of these Phœnician or Canaanitish principalities must have been considerable. The Phœnicians were a fragment of the Canaanites of Scripture; and doubtless in the annals of the separate Phœnician towns, such as Tyre, Sidon, and Aradus, were preserved records, from the Phœnician point of view, of many of those ancient transactions which are related in the Scriptural account of the settlement of the Jews in Canaan. Without going back, however, into the remoter period of Phœnician history, one of the questions connected with which is, whether Tyre (founded, it was said, B.C. 2700) or Sidon was the more ancient town, let us give a summary view of the nature of the Phœnician civilisation at the period of its highest celebrity—namely, from B.C. 1200 to B.C. 700, at which

time we find Tyre exercising a presiding influence over the other Phœnician communities.

The Phœnicians were the great trading nation of antiquity. Situated at so convenient a point on the Mediterranean, it devolved on them to transport to the sea-shore the commodities of the East, brought to them overland by Arabian and Egyptian caravans, and from the sea-shore to distribute them among the expecting nations of the West. Nor were they without valuable products of their own. The sand of their coasts was particularly suitable for the manufacture of glass; their bays abounded in a species of fish which produced a fine purple dye—the celebrated Tyrian purple of antiquity; and in various parts of the country there were excellent mines of iron and copper. It was, in fact, essential for the general interests of the race that the people inhabiting that portion of the Mediterranean coasts should devote themselves to commerce. In anticipation of this, as it might seem, the mountains of Libanus, which separated the narrow Phœnician territory from Syria, were stocked with the best timber, which, transported over the short distance which intervened between these mountains and the sea, abundantly supplied the demands of the Phœnician dockyards. There was something in the Phœnician character, also, which suited the requirements of their geographical position. Skilful, enterprising, griping in their desire for wealth, and in other respects resembling much their neighbours the Jews, to whom they were allied in race, and whose language was radically identical with their own—theirs was essentially the merchant type of character.

Standing as the Phœnicians did as the people by whom the exchange between the East and the West was managed, a complete view of their life and manner of activity should embrace *first*, their relations with the East—that is, their overland trade with Assyria, Arabia, Egypt, Persia, and India; *secondly*, their relations with the West—that is, their maritime trade with the various nations of the Mediterranean and Atlantic coasts; and *thirdly*, the peculiar character of mind which either accompanied or resulted from the consciousness of such a position in the great family of mankind.

With regard to the overland trade of the Phœnicians with the Eastern countries, little requires to be said except that it was one attended with great risks—the journey of a caravan across the deserts, and through the roaming tribes which separated Phœnicia from interior Asia, being a more serious enterprise than a long sea voyage. It is probable that the Phœnicians managed this commerce not in their own persons, but as wealthy speculative merchants, dealing in a skilful manner with the native Egyptian, Assyrian, or Arabian caravan-proprietors, with whom they maintained an understood connection. At the same time it is likely that they stimulated and regulated the Eastern commerce, by means of Phœnician agents or emissaries despatched into the interior with general instructions, just as in later times European agents were often despatched into the interior of Africa to direct the movements of native merchants. It was in their maritime trade with the West, however, that the Phœnicians chiefly exhibited the resources of their own character. Shipping the Oriental commodities, as well as their native products, at Tyre or Sidon, they carried them to all the coasts of the Mediterranean as far as Spain, selling them there at immense profit, and returning with freights of Western goods. With some of the nations of the Mediterranean their intercourse would be that of one civilised nation with another; with others, and especially with those of the West, it must have been an intercourse similar to that of a British ship with those rude islanders who exchange their valuable products for nails, bits of looking-glass, and other trifles. Whether their customers were civilised or savage, however, the Phœnicians reaped profits from them. Their aim was to monopolise the commerce of the Mediterranean. 'If at any time,' it is said, 'their ships bound on a voyage observed that a stranger kept them company, or followed them in their track, they were sure to get rid of him, or deceive him if they could; and in this they went so far as to venture the loss of their ships, and even of their lives, so that they could but destroy or disappoint him; so jealous were they of foreigners, and so bent on keeping all to themselves. And to add to the dangers of the sea, and discourage other nations from trading, they practised piracy, or pretended to be at war with such as they met when they thought themselves strongest.' This policy succeeded so far, that hardly a merchant ship was to be seen in the Mediterranean not manned by Phœnicians. From this extension of the Phœnician commerce throughout the Mediterranean resulted, by necessity, an extensive system of colonisation. The distance, for instance, of Spain from Phœnicia, rendered all the greater by the ancient custom of always sailing close by the coast, made it necessary for the Phœnician traders to have intermediate ports, settlements, or factories, to which their vessels might resort, not to say that such settlements were required for the collection of the produce which was to be taken back to Phœnicia. Accordingly, in process of time, Phœnician colonies were established at all available points of the Mediterranean—on the coasts of Africa, Sicily, Sardinia, and Spain, and in the Balearic Islands; the rising maritime spirit of the Greeks excluding the Phœnicians from the Ægean and the coasts of Asia Minor. Among the most ancient of the colonies from Tyre were Carthage and Utica on the African coast, and Gades (Cadiz) in Spain; all of which were founded before the first of the Greek Olympiads (B.C. 884). From these afterwards arose smaller settlements, which diffused the Phœnician agency still more extensively among the uncivilised nations of Africa and western Europe. Gades in Spain, situated, according to the ancient mode of navigation, at a distance of seventy-five days' sail from Tyre or Sidon—a distance larger than that which now divides Liverpool from Bombay—was a colony of special importance; first, as commanding the inland Spanish trade, particularly valuable at that time, inasmuch as the gold and silver mines of Spain caused it to be regarded as the Mexico or Peru of the ancient world; and secondly, as forming a point from which the Phœnician commerce could be still farther extended along the extra-Mediterranean shores. From this point, we are told, the Phœnician ships extended their voyages southwards for thirty days' sail along the western coast of Africa, and northwards as far as Britain, where they took in tin from the mines of Cornwall, and even as far as the Baltic, where they collected amber. Upon what a scale of profit must these expeditions have been conducted, when, from Tyre to Cornwall, not a merchant ship besides those of the Phœnicians was to be seen! And who can tell what influence these Phœnician visits may have had on the then rude nations bordering the Atlantic!—or how far these ante-historic Phœnician impulses may have stimulated the subsequent career of these nations! Like the visit of an English merchantman now to a South Sea island, so must have been the visit of a Phœnician trading vessel 3000 years ago to the Britons of Cornwall.

As might be expected, this great merchant people were among the most cultured of antiquity, and especially skilled in all the arts of luxurious living. The 27th chapter of the book of Ezekiel presents a most striking picture of the pride and magnificence of the Tyrians, and embodies many minute particulars relative to Phœnician customs and mode of life. Indeed it has justly been pronounced the most early and most authentic record extant relative to the commerce of the ancients. We shall therefore quote part of it, inserting parenthetical explanations. 'O thou,' says the prophet, 'that art situate at the entry of the sea, which art a merchant of the people for many isles, thus saith the Lord God, O Tyrus, thou hast said, I am of perfect beauty. Thy borders are in the

midst of the seas, thy builders have perfected thy beauty, they have made all thy shipboards of fir-trees of Senir (Mount Hermon); they have taken cedars from Lebanon to make masts for thee. Of the oaks (some translate *alders*) of Bashan have they made thine oars; the company of the Ashurites have made thy benches of ivory, brought out of the isles of Chittim (better translated "thy benches"—that is, seats in a pleasure-galley—have they made of ivory inlaid in box from the isles of Chittim—supposed to be Cyprus, Corsica, or Pontus in Asia Minor). Fine linen with broidered work from Egypt was that which thou spreadest forth to be thy sail (some interpret *flag;* but the reference is probably to a pleasure-vessel, whose sails might consist of fine linen); blue and purple from the isles of Elishah (the Grecian countries) was that which covered thee (were used as awnings—Laconian purple being more suitable for this purpose than the more expensive Tyrian). The inhabitants of Zidon (Sidon) and Arvad (Aradus) were thy mariners: thy wise men, O Tyrus, that were in thee, were thy pilots. The ancients of Gebal (another Phœnician city) and the wise men thereof were in thee thy caikers; all the ships of the sea with their mariners were in thee to occupy thy merchandise. (This passage is very minute—Tyre, it seems, supplied its own pilots, but drew its mariners and shipwrights from other parts of Phœnicia.) They of Persia, and of Lud, and of Phut, were in thine army, thy men of war: they hanged the shield and helmet in thee; they set forth thy comeliness (Tyre, it seems, like her daughter Carthage, employed mercenary troops, drawing them chiefly from the nomad tribes of Persia, &c.) . . . . Tarshish (here Tarshish means Tarlessus, the Spanish colony of the Phœnicians) was thy merchant (agent) by reason of the multitude of all kind of riches; with silver, iron, tin, and lead, they traded in thy fairs. Javan (the Grecian countries), Tubal, and Meschach (the countries near the Black and Caspian Seas), they were thy merchants; they traded the persons of men (slaves—Circassian and Georgian slaves, valued then as now) and vessels of brass in thy market. They of the house of Togarmah (Armenia) traded in thy fairs with horses, and horsemen, and mules. The men of Dedan (either India or southern Arabia) were thy merchants; many isles were the merchandise of thine hand: they brought thee for a present horns of ivory and ebony (either *tusks of ivory* or *horns, ivory and ebony*). Syria (Cœle, Syria, and Mesopotamia) was thy merchant by reason of the multitude of the wares of thy making: they occupied in thy fairs with emeralds, purple, and broidered work, and fine linen, and coral, and agate. Judah, and the land of Israel, they were thy merchants; they traded in thy market wheat of Minnith and Pannag, and honey, and oil, and balm. (The proximity of a corn-growing country like Judea was of great advantage to the Phœnicians—the other products mentioned were also supplied from Judea; the balm from the neighbourhood of Lake Genesareth.) Damascus was thy merchant in the multitude of the wares of thy making, for the multitude of all riches; in the wine of Helbon (Aleppo) and white wool. Dan also and Javan (here part of Arabia is meant), going to and fro, occupied in thy fairs: bright iron, cassia, and calamus, were in thy market. Dedan was thy merchant in precious clothes for chariots. Arabia (the Bedouin Arabs), and all the princes of Kedar, they occupied with thee in lambs, and rams, and goats.'

Among the contributions made by the Phœnicians to the west, were alphabetical writing, the Greek alphabet being a derivative from the Phœnician; the scale of weight; and that of coined money. Having made these and other contributions to the west, Phœnicia began about 700 B.C. to decline in importance; the Ionian Greeks, and latterly the Egyptians, becoming its commercial rivals on the Mediterranean; and the invasions of the Assyrians from the east depriving it of independence. Subdued by the Assyrians and Babylonians, Phœnicia was transferred by them to the Persians. Among the last of the Phœnician achievements was the circumnavigation of Africa B.C. 600—a feat undertaken by Phœnician sailors at the command of the Egyptian king Nekos, one of the immediate successors of Psammetik; and, as is now believed, really performed—the course pursued being from the Red Sea round Africa to Spain—the reverse, therefore, of that followed by Vasco de Gama 2000 years later. About the time that Phœnicia began to wane, her colony, Carthage, assumed her place in the affairs of the world. Carthaginian civilisation was essentially a mere repetition of the Phœnician, although under a different form of government: Carthaginian history interweaves itself with that of the Romans. (See No. 57.)

Palestine—the Jews.

Palestine extends from north to south a length of about 200 miles, and 50 in breadth; and is therefore, in point of size, of nearly the same extent as Scotland. The general character of the country is that of a hilly region, interspersed with moderately fertile vales; and being thus irregular in surface, it possesses a number of brooks or streams, which for the most part are swollen considerably after rains, but are almost dry in the hot seasons of the year. The present condition of Palestine scarcely corresponds with its ancient fertility. This is chiefly attributable to the devastating effects of perpetual wars; and some physical changes have also contributed to the destruction of agricultural industry. Yet, after all, so excellent would the soil appear to be, and so ample its resources, that Canaan may still be characterised as a land flowing with milk and honey.

The history of the extraordinary nation which once inhabited this land, must be so much more familiar to our readers than that of any other ancient nation, that all that is necessary here is a brief sketch, such as will assist the imagination in tracing with due completeness the general career of the East till the establishment of the Persian empire. According to the accounts given of the Jews in Scripture, and in their history by Josephus, they were descended from Abraham, the tenth in descent from Noah, through his second son Shem. According to Josephus, Abraham, who was born in the 292d year (according to other authorities, in the 352d year) after the Deluge, 'left the land of Chaldea when he was seventy-five years old, and, at the command of God, went into Canaan, and therein he dwelt himself, and left it to his posterity. He was a person of great sagacity, both for understanding of all things and persuading his hearers, and not mistaken in his opinions; for which reason he began to have higher notions of virtue than others had, and he determined to renew and to change the opinion all men happened then to have concerning God; for he was the first that ventured to publish this notion, that there was but ONE God, the Creator of the universe; and that as to other gods, if they contributed anything to the happiness of men, that each of them afforded it only according to His appointment, and not by their own power. For which doctrines, when the Chaldæans and other people of Mesopotamia raised a tumult against him, he thought fit to leave that country, and at the command of God he came and lived in the land of Canaan. And when he was there settled, he built an altar, and performed a sacrifice to God.' After the death of Abraham's son Isaac, *his* younger son Jacob remained for a number of years in Canaan, surrounded by a family of twelve sons, one of whom, Joseph, as related in Scripture, became the cause of the removal of his father and brethren, and all belonging to them, into Egypt. The Hebrew emigrants were seventy in number, and formed at the first a respectable colony among the Egyptians. Jacob died after having been seventeen years in Egypt, and his body was carried by Joseph to Hebron, and buried in the sepulchre of his father and grandfather. Joseph also died in Egypt at the age of 110, and at length his brethren died likewise. Each of the twelve sons of Jacob became the progenitor of a family or tribe, and the twelve tribes, personified by the term

ISRAEL, continued to reside in Egypt, where they increased both in number and in wealth. Their rapid increase and prosperity soon excited the jealousy of the masters of the country; and from being in high favour, the different tribes gradually fell under the lash of power, and came to be treated as public slaves.

The entire body of Israelites, guided by Moses, fled from Egypt in the year 1490 before Christ, at a time when Thebes, Memphis, and the other magnificent cities of that country, were in all their glory. Proceeding in a north-easterly direction from Rameses (near the site of modern Cairo), they went through the level region of the land of Goshen (now a barren sandy plain) to the head of the Gulf of Suez, the western branch of the Red Sea. Here they crossed in a miraculous manner to the opposite shore, to a spot now called the Wells of Moses, where, according to the Scripture narrative, they sang their song of thanksgiving for their deliverance. The country in which they had now arrived was a portion of Arabia Petræa, consisting of a dismal barren wilderness, now called the Desert of Sinai, from the principal mountain which rises within it. From the point at which the Israelites had crossed the Red Sea from Egypt, they were conducted by a most circuitous and tedious route towards the Promised Land of Canaan. Their tiresome journey extended over a period of forty years, and was not completed till all the Hebrews who were above twenty years of age when they left the land of Egypt (excepting Caleb and Joshua) had died, and a new generation, possessing greater courage and confidence in the Almighty, had succeeded them. In the trackless wilderness through which they were led, their multitudes, as we learn from Scripture, could neither have traced their way nor procured subsistence without a continued miracle. The hand of God brought for them streams of water out of the flinty rock; rained manna or bread from heaven; and gave a pillar of cloud to direct their journeys through the day, and a pillar of fire by night. He delivered the tables of a moral law, comprehending the ten commandments, to Moses their leader; and promulgated a set of regulations for the ceremonies of worship, the establishment of a separate order devoted to religion and learning, and for the civil government of the nation. The Hebrews had thus a regular polity and written laws when most other nations knew only the law of the sword, or of savage animal superiority.

The country on the shore of the Mediterranean which was allotted as a settlement to this people, was at that time occupied by many warlike tribes, who had grown strong in its fertile plains and valleys; and the generation of the Hebrews who were conducted into it were compelled to fight for its possession. The struggle was not of long continuance. The whole land was conquered in the year B.C. 1450.

According to the account given in the 26th chapter of the book of Numbers, the Hebrew nation thus brought out of the land of Egypt and settled in Canaan amounted to 601,730 souls, unto whom the land was divided for an inheritance, according to the number of individuals in the respective tribes. The tribes, and their fighting men above twenty years of age, were reckoned as follow:—Tribe of Reuben (the eldest son of Jacob) 43,730; Simeon 22,200; Gad 40,500; Judah 76,500; Issachar 64,300; Zebulun 60,500; Manasseh 52,700; Ephraim 32,500 (the tribes of Manasseh and Ephraim were both from Joseph); Benjamin 45,600; Dan 64,400; Asher 53,400; and Naphtali 45,400. Among these twelve tribes the land was divided. The tribe of Levi (to which belonged Moses, Aaron, and Eleazar the high priest), amounting to 23,000 males from a month old and upwards, received no share of the land: being set apart for the priesthood, the tenth or tithe of the general produce was assigned them as their perpetual inheritance. By making a special agreement with the other tribes that they should assist them against the common enemy, the two tribes of Gad and Reuben, and the half tribe of Manasseh, were permitted to appropriate land for their inheritance in Gilead and Bashan, on the Arabian side of the Jordan.

Moses dying before the inheritance was entered upon, was succeeded by Joshua as a leader, and by him the Israelites were conducted across the Jordan. The political government of the various tribes, after their conquest and settlement of Canaan, appears to have been republican, with military leaders called Judges; but these acted by the direction of the priesthood, who were immediately counselled by the Deity within the sanctuary. This period of separate government in tribes, called the Period of the Judges, lasted 300 years (B.C. 1427-1112), and was one of daring actions and great deliverances—the heroic age of the Jews.

The epoch of kings succeeded that of judges. The reign of Saul, their first monarch, though the people were stronger by being united, was gloomy and troubled. David, who succeeded, was a soldier and a conqueror. He rendered the Hebrews formidable to the whole of their enemies, and gave them a regular and defensible position, expelling their old antagonists from every part of the country. He left an empire peaceful, respected, and strong; and, what was of as much importance, he selected from among his sons a successor who was able to improve all these advantages, and to add to the progress which his countrymen had already made in prosperity. Under Solomon, the name of the Hebrew government being able to protect its subjects in other countries, the people and their king began to employ themselves in commerce. Their trade was at first engrafted on that of the Phœnicians of Tyre. A greater contrast cannot be imagined than between the troubles of the time of the Judges (only 100 years before), and the peace, security, and enjoyment of this reign. 'And the king made silver to be in Jerusalem as stones, and cedars made he to be as sycamore trees that are in the vale for abundance; and Judah and Israel were many; as the sand which is by the sea-shore for multitude, eating, and drinking, and making merry.' (1 Kings, x. 27.)

After the death of Solomon, the country fell into the same divisions which had weakened it in the time of the Judges. Each of the districts of North and South Israel was under a separate king, and the people were exposed both to the attacks of their enemies and to quarrels with each other. Their history is a succession of agitating conflicts for independence, and of unexpected and remarkable deliverances, of a similar nature to those of the earlier period, and they continued for about the same length of time (380 years); but they are marked by fewer of those traits of heroic devotion which distinguished the epoch of the Judges. The backslidings, errors, and misgovernment of their kings, is the chief and painful subject which is presented to us; and though these are relieved at times by the appearance of such monarchs as Josiah, Jehoshaphat, and Hezekiah, yet the whole history of this period is overcast with the gloominess of progressive decline. By far the most delightful parts of it are those which relate to the lives of the prophets, who were raised up at intervals to warn the nation and its rulers of the fate which they incurred by forsaking the religion of their fathers. These inspired men sometimes sprang up from among the humblest classes of the community: one from 'the herdsmen of Tekoa,' another from 'ploughing with twelve yoke of oxen;' several were of the priestly order, and one (Isaiah) is said to have been of royal lineage; but the works of all are marked with the same sacredness, force, and authority. They reprehend their countrymen, in the most eloquent strains, at one time for idolatry, and at another for hypocrisy; and their indignation is expressed with the same freedom and dignity against the vices of the highest and the lowest.

Of the two kingdoms into which Palestine had divided itself after the death of Solomon (B.C. 975), the northern, called the Kingdom of Israel, was conquered by the Assyrians of Nineveh (B.C. 722), who carried off many thousands of the people into captivity. Little is known of their fate. By some they are supposed to

have been carried to India, by others to Tartary: 'what became of all the Israelites of the ten tribes,' is still a question with historians. The southern kingdom, called the Kingdom of Judah, retained its independence till B.C. 588, when it was invaded and subdued by Nebuchadnezzar, king of Babylon, who destroyed Jerusalem, and carried away a great number of the principal Jews into captivity at Babylon. On the subversion of the Babylonian dominion by Cyrus, seventy years afterwards, the captives, to the number of 42,360, were permitted to return to their own land, and rebuild Jerusalem. At this period, the whole of Palestine merged in the growing Persian empire.

The Assyrians and Babylonians.

That large extent of level country situated between and on the banks of the two great rivers, the Euphrates and the Tigris, was, in the earliest antiquity, the seat of a Semitic population living under an organised government. The origin of the Assyrian state is thus related in Scripture (Genesis, x.)—'And Cush (the son of Ham, the son of Noah) begat Nimrod: he began to be a mighty one in the earth. He was a mighty hunter before the Lord: wherefore it is said, Even as Nimrod the mighty hunter before the Lord. And the beginning of his kingdom was Babel, and Erech, and Accad, and Calneh, in the land of Shinar. Out of that land went forth Asshur (translated in the margin, "Out of that land he—Nimrod—went forth into Assyria"), and builded Nineveh, and the city Rehoboth, and Calah, and Resen between Nineveh and Calah: the same is a great city.' There are two interpretations of this passage, according as the text or the marginal reading is adopted. The one is, that a mighty conqueror of the race of Ham (primitive Ethiopic influence?) made an irruption into Mesopotamia, which belonged to the children of Shem, and built there Babylon on the Euphrates, and other cities; becoming, as the Eastern authors say, the first king in the world, and the first man who wore a crown; and that, driven out of their possessions by this conqueror, a part of the children of Shem proceeded farther east, and built Nineveh on the Tigris. The other is, that Nimrod himself, going from Babylon, built Nineveh. In either sense, the passage represents distinctly the early condition of this part of the world—an extensive plain fertilised by the two rivers, the Tigris and the Euphrates; and with great cities scattered over it, gathering the population together at points, if we may so speak, into large solid masses. Of these cities, the most important ultimately were Babylon, built, according to the above account, by Nimrod, B.C. 2217; and Nineveh (called Ninos by the Greeks), built, according to the same authority, either by Asshur or Nimrod about the same time, but afterwards rebuilt and enlarged, according to ancient tradition, by a great king, Ninus, B.C. 1230, down to which period it had been inferior in size to the Resen mentioned in the Scriptural text. With these two cities as capitals, the country divided itself into two corresponding parts or kingdoms—the kingdom of Assyria proper, including, besides part of Mesopotamia, the country to the right of the Tigris as far as Mount Zagros; and the kingdom of Babylonia, including the western part of Mesopotamia, together with the country to the left of the Euphrates as far as Syria proper. The two kingdoms, however, are often included under the joint name of Assyria; a word which, as well as the shorter form Syria, was often employed by the ancient Greek writers to designate the whole region lying along the courses of the two great rivers from the Black Sea to the northern angle of the Persian Gulf.

Although Babylon was, according to Scripture, the earlier of the two powers, yet the Assyrians of Nineveh attained such strength under their hero Ninus, as to reduce the Babylonians to a species of dependence. Under Ninus, and his wife and successor the great conqueress Semiramis, says ancient mythical history, the city of the Tigris extended its dominions far and wide, from Egypt to the border of India. This empire, known in the common chronologies by the name of 'The Assyrian Empire,' lasted, according to the usual accounts, five or six centuries, during which it was governed, in the absolute Oriental manner, by the successors of Ninus and Semiramis. Of these several are mentioned in Scripture—Phul, the contemporary of Menahem, king of Israel (B.C. 761), and Tiglath Pileser (B.C. 730), both of whom were mixed up with the affairs of Israel and Judah; Salmanassar, contemporary with Hezekiah, king of Judah, and Hosea, king of Israel, by whom it was that Samaria was taken (B.C. 722), and the Israelites led into captivity (B.C. 722); and Sennacherib, or Sanherib (B.C. 714), who attacked Egypt, and whose fruitless invasion of Judah forms the subject of the striking narrative in the 18th and 19th chapters of the second book of Kings. The last of the great line of the Assyrian kings of Nineveh was the luxurious Sardanapalus, in whose reign the empire was dissolved, through the instrumentality of its revolted subjects the Medes (B.C. 626).

After Nineveh, the greatest city in the Assyrian dominion was Babylon. Even while under the dominion of the kings of Nineveh, Babylon appears to have possessed a special organisation under its own chiefs, several of whose names—such as Belesis (B.C. 888), and Nabonassar (B.C. 747)—have been preserved; and, together with the whole province of which it was the capital, to have pursued a special career. The peculiar element in the Babylonian society which distinguished it from that of Assyria proper, was its Chaldæan priesthood. 'The Chaldæan order of priests,' says Mr Grote, 'appear to have been peculiar to Babylon and other towns in its territory, especially between that city and the Persian Gulf; the vast, rich, and lofty temple of Belus in that city served them at once as a place of worship and an astronomical observatory; and it was the paramount ascendancy of this order which seems to have caused the Babylonian people generally to be spoken of as Chaldæans, though some writers have supposed, without any good proof, a conquest of Assyrian Babylon by barbarians called Chaldæans from the mountains near the Euxine. There were exaggerated statements respecting the antiquity of their astronomical observations,* which cannot be traced, as of definite and recorded date, higher than the era of Nabonassar (B.C. 747), as well as respecting the extent of their acquired knowledge, so largely blended with astrological fancies and occult influences of the heavenly bodies on human affairs. But however incomplete their knowledge may appear when judged by the standard of after-times, there can be no doubt that, compared with any of their contemporaries of the sixth century B.C.—either Egyptians, Greeks, or Asiatics—they stood pre-eminent, and had much to teach, not only to Thales and Pythagoras, but even to later inquirers, such as Eudoxus and Aristotle. The conception of the revolving celestial sphere, the gnomon, and the division of the day into twelve parts, are affirmed by Herodotus to have been first taught to the Greeks by the Babylonians.' This learned Chaldæan class seems to have pervaded the general mass of Babylonian society, as the corresponding priest-caste in Egypt pervaded Egyptian society, with this difference, that Babylonian society does not appear to have been parcelled out like the Egyptian into a rigorous system of castes.

On the dissolution of the Assyrian empire of Nineveh by the Medes (B.C. 626), the Chaldæan fragment of it rose to eminence on its ruins, chiefly by the efforts of Nabopolassar, a viceroy of the last Assyrian king. Establishing Babylonia as an independent power in the east, Nabopolassar came into collision with Nekos, king of Egypt, who was at that time extending his empire into Asia. It was in opposing Nekos (Pharaoh-Necho) on his march to Babylon that Josiah, king of

* When Alexander the Great was in Babylon, the Chaldæans told him their order had begun their astronomical observations 400,000 years before he was born.

Judah, was slain. At length (B.C. 606) Nebuchadnezzar, or Nebuchadonosor, the son of Nabopolassar, defeated Nekos, and annexed all his conquests in Asia to his father's kingdom. Two years afterwards the same prince took Jerusalem, and carried away a number of captives to Babylon, among whom were Daniel and his companions. Succeeding his father, B.C. 605, Nebuchadnezzar reigned over Babylon forty-three years (B.C. 605–561); and during his reign extended the empire to the Mediterranean and the borders of Egypt, adding to it Palestine, Phœnicia, &c. With his countenance the Medes and Lydians destroyed Nineveh (B.C. 601). The great abduction of Jewish captives by his orders took place B.C. 588. He was succeeded (B.C. 561) by his son, Evil-Merodach, who was dethroned (B.C. 559) by his brother-in-law Neriglissar, whose son and successor, Laboroso-archod, was dethroned, after a brief reign, by Nabonnedus, the Belshazzar of Scripture (B.C. 555); in the eighteenth year of whose reign (B.C. 538) Babylon was taken by Cyrus, and passed into the hands of the Persians.

It was during the reign of Nebuchadnezzar that the city of Babylon attained that glory which has rendered it a known word to all who are at all acquainted with history. Herodotus, who saw the city in its decline, gives a description of it which has seemed incredible to many, although now fully verified. 'The city, divided in the middle by the Euphrates, was surrounded with walls in thickness 75 feet, in height 300 feet, and in compass 480 stadia, or about 60 of our miles.' Within this circuit there was included, besides the houses, a space of vacant ground, gardens, pasture, &c. sufficient to accommodate the country population in case of invasion: the height and strength of the walls rendered the city itself to all appearance impregnable. 'These walls formed an exact square, each side of which was 120 stadia, or 15 miles in length; and were built of large bricks cemented together with bitumen, a glutinous slime which issues out of the earth in that country, and in a short time becomes harder than the very brick or stone which it cements. The city was encompassed without the walls by a vast ditch filled with water, and lined with bricks on both sides; and as the earth that was dug out of it served to make the bricks, we may judge of the depth and largeness of the ditch from the height and thickness of the walls. In the whole compass of the walls there were a hundred gates—that is, twenty-five on each side, all made of solid brass. At intervals round the walls were 250 towers. From each of the twenty-five gates there was a straight street extending to the corresponding gate in the opposite wall; the whole number of streets was therefore fifty, crossing each other at right angles, and each fifteen miles long. The breadth of the streets was about 150 feet. By their intersection the city was divided into 676 squares, each about two miles and a quarter in compass, round which were the houses, three or four storeys in height; the vacant spaces within being laid out in gardens,' &c. Within the city the two greatest edifices were the royal palace with its hanging gardens, and the temple of Belus, composed of eight towers built one above another, to the enormous height, it is said, of a furlong.

Without the city were numerous canals, embankments, &c. for the purpose of irrigating the country, which, as little or no rain fell, depended on the river for moisture. 'The execution of such colossal works as those of Babylon and Egypt,' it has been remarked, 'demonstrates habits of regular industry, a concentrated population under one government, and above all, an implicit submission to the regal and kingly sway—contrasted forcibly with the small self-governing communities of Greece and western Europe, where the will of the individual citizen was so much more energetic.' In the latter countries only such public works were attempted as were within the limits of moderate taste. Nineveh is said to have been larger even than Babylon, and is described as an oblong, three days' journey round—that is, upwards of 60 miles.

The Medes and Persians.

Extending, as we have said, from the Mediterranean to the Indus, the Assyrian empire had included not only the chief Semitic nations of western Asia, but also that portion of the Indo-Germanic family which was contained between Mount Zagros and the river Indus. Essentially a prolongation of the great race which inhabited Hindoostan, the nature of their country—a vast table-land, here and there rising into hills, or presenting spots of great fertility—had made them quite different in character and habits from the settled and stereotyped Hindoos. All parts of this plateau of Iran, as it was called, including the present countries of Persia, Cabool, and Beloochistan, were not alike; in some portions, where the soil was fertile, there existed a dense agricultural population; in others, the inhabitants were nomadic horse-breeders, cattle-rearers, and shepherds. All the tribes, however, were bound together by the ties of a common Indo-Persic language, quite distinct from that spoken by their Semitic neighbours and masters, and by a common religion. This religion, called the Religion of Zend, a modification probably of some more ancient form, from which Hindooism may also have sprung, was taught by Zerdusht or Zoroaster, a great native reformer and spiritual teacher, who lived six or seven centuries before Christ. The principal doctrine of his religion was that of the existence of two great emanations from the Supreme and perfect Deity—the one a good spirit (Ormuzd), who created man, and fitted him for happiness; the other an evil spirit, named Ahriman, who has marred the beauty of creation by introducing evil into it. Between these two spirits and their adherents there is an incessant struggle for the mastery; but ultimately Ormuzd will conquer, and Ahriman and evil will be banished from the bosom of creation into eternal darkness. The worship annexed to this doctrine was very simple, dispensing with temples or images, and consisting merely of certain solemn rites performed on mountain tops, &c. Fire, and light, and the sun, were worshipped either as symbols or as inferior deities. A caste of priests, called the Magi, answering in some respects to the Brahmins of India or the Chaldæans of Babylon, superintended these ceremonies, and commented on the religion of Zoroaster.

Various of the tribes of Iran, associating themselves together, constituted little nations. Thus adjacent to Assyria, and separated from it by Mount Zagros, was an agglomeration of seven tribes or villages, under the special name of the Medes, the country which they inhabited being thence called Media. South from Media, and nearer the sea, was another district of Iran, called Persis or Persia, inhabited also by an association of tribes calling themselves the Persians. Other nations of Iran were the Parthians, the Bactrians, &c.—all originally subject to the Assyrian empire.

Median history begins with a hero king called Deiokes (B.C. 710–657), who effected some important changes in the constitution of the nation, and founded the Median capital Ekbatana in one of the most pleasant sites in the world. His son, Phraortes (B.C. 657–635), pursued a career of conquest, subjugated Persia and other districts of Iran, and perished in an invasion of Assyria. He was succeeded by his son Cyaxares, who continued his designs of conquest, and extended the Median dominion as far westward into Asia Minor as the river Halys. He was engaged in a repetition of his father's attempt against Nineveh, when he was called away to defend his kingdom against a great roving population, belonging, as is most likely, to the Scythian branch of the Caucasian race (although some reckon them Mongols), who, bursting with their hords of horses and mares from their native seat in Central Asia, had driven the Cimmerians, a kindred race, before them into Asia Minor, and then had poured themselves over the plateau of Iran. Defeating Cyaxares, they kept him from his throne for a period of twenty-eight years, during which they ruled in savage fashion over Media, Persia, &c. At length, having assassinated their chiefs

by a stratagem, Cyaxares regained his dominions, and drove the invaders back into the north. He then renewed his attempt against Nineveh; took it; and reduced the Assyrian empire, with the exception of Babylonia, under his dominion. The Median empire, thus formed, he bequeathed (B.C. 595) to his son Astyages.

Astyages having given his daughter Mandané in marriage to a Persian chieftain named Cambyses, the issue of this marriage was the famous Cyrus, the founder of the Persian monarchy. The circumstances which led to the revolt of the Persians under Cyrus against the Medes, and the dethronement by him of his grandfather Astyages (B.C. 560), had been woven into a romance resembling the story of Romulus, even so early as the age of Herodotus (B.C. 408), so that that accurate historian could not ascertain the particulars. 'The native Persians,' says Mr Grote, 'whom Cyrus conducted were an aggregate of seven agricultural and four nomadic tribes, all of them rude, hardy, and brave, dwelling in a mountainous region, clothed in skins, ignorant of wine or fruit, of any of the commonest luxuries of life, and despising the very idea of purchase or sale. Their tribes were very unequal in point of dignity; first in estimation among them stood the Pasargadæ; and the first clan among the Pasargadæ were the Achæmenidæ, to whom Cyrus belonged. Whether his relationship to the Median king whom he dethroned was a fact or a politic fiction we cannot well determine, but Xenophon gives us to understand that the conquest of Media by the Persians was reported to him as having been an obstinate and protracted struggle.'

Master of Media, the Persian chief in his turn became a great Oriental conqueror; indeed all the Oriental conquests bear the same character. A nomadic race, led by a chief of great abilities, invades the more organised states, and conquers them; the chief assumes the government, and founds a dynasty, which, after a rule of several generations, becomes enervated, and gives way before some new nomadic incursion. The first power against which Cyrus turned his arms, after having subdued the Medes, was the famous Lydian kingdom, which then subsisted in Asia Minor under the great Crœsus. And here, therefore, we must give some account of the ancient condition of Asia Minor and its principalities.

States of Asia Minor—The Lydians.

The river Halys divided Asia Minor into two parts. East of the Halys, or near its source, were various nations of the Semitic stock—Cappadocians, Cilicians, Pamphylians, &c.—each organised apart, but all included under the Assyrian, and latterly, as we have seen, under the Median empire. West of the Halys, the inhabitants were apparently of the Indo-Germanic race, although separated by many removes from the Indo-Germans of Persia. Overspreading this part of Asia Minor, as well as Thrace and other parts of south-eastern Europe, this great race had been broken up into fragments distinguished by characteristic differences. To enumerate these various nations, assigning to each its exact geographical limits, is impossible: the chief, however, were the Bithynians, a sort of Asiatic Thracians on the southern coast of the Euxine; the Lydians and Carians in the south-west; and, intermediate between the two, geographically as well as in respect of race and language, the Mysians and Phrygians. These were the native states; but along the whole Ægean shore was diffused a large Greek population, emigrants, it is believed, from European Greece, chiefly gathered into cities. These Greeks of Asia Minor were of three races—the Æolic Greeks in the north, and the Ionian and Dorian Greeks in the south; and perhaps the earliest manifestations of Greek genius, political or literary, were among these Greeks of Asia. The intercourse of these Greeks with the native Lydians, Phrygians, &c. gave rise to mixture of population as well as to interchange of habits; the native music especially of the Lydians and Phrygians became incorporated with that of the Greeks.

When Lydia, with its capital Sardis, first began to be a powerful state, is not known; it is remarkable, however, that the Lydians are not mentioned in Homer. According to Herodotus, the Lydians traced their history back through three dynasties. 1st, The Atyadæ, from the earliest times to B.C. 1221; 2d, The Heracleidæ, from B.C. 1221 to B.C. 716; and 3d, The Mermnadæ. Only the last dynasty is historic; the manner in which it succeeded to that of the Heracleidæ forms the subject of a curious Lydian legend.

The first king of the Mermnad dynasty was Gyges (B.C. 716–678), the second Ardys (B.C. 678–629), in whose reign the Commerians invaded Asia Minor, the third Sadyattes (B.C. 629–617), the fourth Alyattes (B.C. 617–560). Each of these Lydian kings was engaged in wars both with the Asiatic Greeks of the coast and the native states of the interior. The growth of the Lydian power was impeded by the Commerian invasion; but those savage nomades were at length expelled by Alyattes; and Crœsus, the son of Alyattes by an Ionian wife, having succeeded his father B.C. 560, soon raised himself to the position of a great potentate, ruling over nearly the whole country westward of the Halys, comprehending Æolian, Ionian, and Dorian Greeks; Phrygians; Mysians, Paphlagonians, Bithynians, Carians, Pamphylians, &c. At Sardis, the capital of this extensive dominion, was accumulated an immense treasure, composed of the tribute which the Lydian monarch derived from the subject states; hence the proverb 'as rich as Crœsus.'

Separated from the Median kingdom only by the river Halys, the Lydian dominion naturally became an object of desire to Cyrus after he had acquired the sovereignty of Media. Accordingly (B.C. 546), provoked by an invasion of Crœsus, who had received from the Delphic oracle the equivocal assurance, that 'if he attacked the Persians he would subvert a mighty monarchy,' Cyrus crossed the Halys, advanced into Lydia, took Sardis, and made Crœsus prisoner. It was intended by the conqueror that the Lydian king should be burnt alive—it is even said that the fire was kindled for the purpose; Cyrus, however, spared his life, and Crœsus became his friend and confidential adviser. On the subversion of the Lydian monarchy, its subjects, the Greeks of Asia Minor, were obliged to submit to the conqueror, after having in vain solicited the aid of their brethren the European Greeks. The Lacedæmonians indeed sent an embassy into Asia Minor; and one of their ambassadors had a conference with Cyrus at Sardis, where he warned him 'not to lay hands on any of the Greek towns, for the Lacedæmonians would not permit it.' 'Who are the Lacedæmonians?' said the astonished warrior. Having been informed that the Lacedæmonians were a Greek people, who had a capital called Sparta, where there was a regular market, 'I have never yet,' said he, 'been afraid of this kind of men, who have a set place in the middle of their city where they meet to cheat one another and tell lies. If I live, they shall have troubles of their own to talk about.' To save themselves from the Persians, the Ionian portion of the Asiatic Greeks proposed a universal emigration to the island of Sardinia—a striking design, which, however, was not carried into execution. All Asia Minor ultimately yielded to Cyrus.

The Persian Empire.

Having subdued Asia Minor, Cyrus next turned his arms against the Assyrians of Babylon. His siege and capture of Babylon (B.C. 538), when he effected his entrance by diverting the course of the Euphrates, form one of the most romantic incidents in history; an incident connected with Scriptural narrative through its result—the emancipation of the Jews from their captivity. Along with Babylon, its dependencies, Phœnicia and Palestine, came under the Persians.

Cyrus, one of the most remarkable men of the ancient world, having perished in an invasion of Scythia (B.C. 529), was succeeded by his son Cambyses, who annexed Egypt to the Persian empire (B.C. 525), hav-

ing defeated Psammanitus, the son of the Pharaoh Amasis. Foiled in his intention of penetrating Libya and Ethiopia, Cambyses was dethroned by a Magian impostor, who called himself Smerdis, pretending that he was the younger brother of Cambyses, although this brother had been put to death by the order of Cambyses during a fit of madness. A conspiracy of seven great nobles having been formed against the false Smerdis, he was put to death. He was succeeded by one of the conspiring chiefs called Darius Hystaspes, who reigned—over the immense Persian empire, extending from the Nile to the Indus, and beyond it—from B.C. 521 to B.C. 485. 'The reign of Darius,' says Mr Grote, 'was one of organisation, different from that of his predecessor—a difference which the Persians well understood and noted, calling Cyrus "the father," Cambyses "the master," and Darius "the retail trader or huckster." In the mouth of the Persians this last epithet must be construed as no insignificant compliment, since it intimates that he was the first to introduce some methodical order into the imperial administration and finances. Under the two former kings there was no definite amount of tribute levied upon the subject provinces. But Darius probably felt it expedient to relieve the provinces from the burden of undefined exactions. He distributed the whole empire into twenty departments (called Satrapies), imposing upon each a fixed annual tax. This, however, did not prevent each satrap (the Persian governor appointed by the king) in his own province from indefinite requisitions. The satrap was a little king, who acted nearly as he pleased in the internal administration of his province, subject only to the necessity of sending up the imperial tribute to the king at Susa, the capital of the Persian empire; of keeping off foreign enemies; and of furnishing an adequate military contingent for the foreign enterprises of the great king. To every satrap was attached a royal secretary or comptroller of the revenue, who probably managed the imperial finances in the province, and to whom the court of Susa might perhaps look as a watch upon the satrap himself. The satrap or the secretary apportioned the sum payable by the satrapy in the aggregate among the various component districts, towns, or provinces, leaving to the local authorities in each of these latter the task of assessing it upon individual inhabitants. From necessity, therefore, as well as from indolence of temper and political incompetence, the Persians were compelled to respect the authorities which they found standing both in town and country, and to leave in their hands a large measure of genuine influence. Often even the petty kings who had governed separate districts during their state of independence, prior to the Persian conquest, retained their title and dignity as tributaries to the court of Susa. The empire of the great king was thus an aggregate of heterogeneous elements, connected together by no tie except that of common fear and subjection—noway coherent nor self-supporting, nor pervaded by any common system or spirit of nationality.'

Continuation through Greek and Roman History.

How Darius, in consequence of the assistance rendered by the Athenians to the Ionian Greeks of Asia Minor, who had revolted against him (B.C. 502), sent a vast Persian army into European Greece; how this army was defeated by the Athenian general, Miltiades, with only 11,000 men, in the glorious battle of Marathon (B.C. 490); how, ten years later, Xerxes, the son and successor of Darius, undertook an expedition against Greece with a host of several millions, and was defeated by Themistocles in a naval battle at Salamis (B.C. 480), which was followed by two contemporaneous defeats of his lieutenants at Plataea and Mycalé (B.C. 479); how the Persians were thus finally driven back into Asia; how for a century and a-half relations, sometimes hostile and sometimes friendly, were maintained between the Greek states and the Persian monarchs, the degenerate successors of Darius and Xerxes, under whom the empire had began to crumble; how at length, in the reign of Darius Codomannus (B.C. 334), Alexander the Great retaliated on the Persians the wrongs they had done the Greeks by invading and destroying their decrepit empire, and organising all the countries between the Adriatic and the Indus under, not a Semitic, as in the case of the Assyrian empire, nor an Indo-Germanic, as in the case of the Persic empire, but a Greek or Pelasgic system; how, on Alexander's death (B.C. 323), this vast agglomeration of the human species fell asunder into three Greek monarchies—the Macedonian monarchy, including the states of European Greece; the Egyptian monarchy of the Ptolemies, including, besides Egypt, Phœnicia, Palestine, and Arabia; and the Syrian monarchy of the Seleucidæ, comprehending, although with a weak grasp, Asia Minor (or at least parts of it which had belonged to the Lydian and Assyrian empires), Syria, Assyria, and Babylonia; with the loss, however, of the countries between the Tigris and the Indus, where a germ of independence arose (B.C. 236) in a native nomad dynasty, which ultimately united all the tribes of Iran in one empire, called *the Parthian Empire*; and how these three fragments dragged on a separate existence, full of wars and revolts: all this belongs to Grecian history—that is, to the history of the Hellenic portion of the Pelasgians, whose career is fully detailed in the following number.

How, about two centuries and a-half before Christ, another, but more mixed portion of this Pelasgic family, which had arisen in Italy, and in the course of several centuries rendered itself co-extensive with that peninsula—began to assume consequence in the wider area of the Mediterranean world: how it first grappled with the power of the Carthaginians (B.C. 264–201), who for several centuries had been pursuing the career of world-merchants, formerly pursued by their fathers the Phœnicians; how it then assailed and subdued the crumbling Macedonian monarchy, incorporating all Greece with itself (B.C. 134); how, retrograding, so to speak, into Asia, it gradually ate up the Syrian and Egyptian monarchies, till it came into collision with the Parthian empire at the Euphrates (B.C. 134—B.C. 60); how, advancing into the new regions of northern and western Europe, it compelled the yet uncultured races there—the Celts or Gauls, the Iberians, &c.—to enter the pale of civilisation (B.C. 60–50); how thus, from the Atlantic to the Euphrates, was founded a new empire, called 'The Roman,' retaining, with vast additions, all that portion of humanity which the former empires had embraced, with the exception of what had lapsed back to the Parthians; how this empire subsisted for several centuries, a great mass of matured humanity girt by comparative barbarism—that is, surrounded on the east by the Parthians, on the south by the Ethiopians, on the north by the Germans and Scythians, and on the west by the roar of the Atlantic; and how at last (A.D. 400–475) this great mass, having lost its vitality, fell asunder before the irruption of the barbaric element—that is, the Germans, the Scythians, and the Arabs—giving rise to the infant condition of the modern world: all this belongs to Roman history, which forms the subject of a separate treatise.

With one general remark we shall conclude; namely, that the progress of history—that is, of the Caucassian development—has evidently been, upon the whole, from the east westward. First, as we have seen, the Assyrian or Semitic fermentation affected western Asia as far as the Mediterranean; then the Persian movement extended the historic stage to the Ægean; after that the Macedonian conquest extended it to the Adriatic; and finally, the Romans extended it to the Atlantic. For fifteen centuries humanity kept dashing itself against this barrier; till at length, like a great missionary sent in search, the spirit of Columbus shot across the Atlantic. And now, in the form of a dominant Anglic race, though with large intermixture, Caucasian vitality is working in its newest method, with Ethiopian help, on the broad and fertile field of America.

HISTORY OF GREECE.

GREECE is a peninsula situated on the northern shore of the Mediterranean, between the Ionian and Ægean Seas. As a country, it is beautifully diversified by hills and valleys, like Wales or the Highlands of Scotland. Some of the hills are so high as to be constantly covered with snow; while the low districts enjoy a mild climate, and are of extreme fertility—several of them, as Tempe and Arcadia, being spoken of with rapture by the poets of ancient times. As the country is much divided by hills and indentations of the sea, it was partitioned, from an early period, into a number of petty states, which were under separate governments, and often at war with each other. The southern part of the peninsula, anciently styled the Peloponnesus, and now the Morea, was divided into Laconia (containing Sparta), Argolis, Achaia, Arcadia, Elis, and Messenia, each of which was only about the size of a moderate English county. Middle Greece (now Livadia), to the north of the Peloponnesus, and connected with it by the Isthmus of Corinth, on which lay the city of that name, contained Attica (in which was the city of Athens), Megaris, Bœotia (in which was the city of Thebes), Phocis, Locris, Doris, Ætolia, and Acarnania. Northern Greece contained Thessaly (now the district of Janninn), Epirus (now Albania), and Macedonia (now Filiba Vilajeti), the last of which did not, however, belong to Greece till a comparatively late period.

To the east of Greece proper lay the numerous islands of the Ægean Sea, otherwise denominated the Archipelago; with which may be included certain islands lying in the Mediterranean Sea in the same direction, the principal of which were Rhodes, Cyprus, and the Cyclades. To the south lay Cythera (now Cerigo) and Crete (now Candia). To the west, in the Ionian Sea, lay Corcyra (Corfu), Cephalonia, Ithaca, and others, now constituting the distinct confederacy of the Ionian Islands, under protection of Great Britain.

Besides having possession of these various districts on the mainland, and islands on both sides of the peninsula, the Greeks in the course of time acquired colonies in Sicily and Southern Italy, as well as on the coast of Asia Minor, adjacent to the islands in the Ægean Sea. The principal of these Asiatic possessions was Ionia, a beautiful and fertile country, the capital of which was Ephesus.

In consequence of Greece having been divided into a number of petty states, each of which maintained its own political independence, the history of the country necessarily assumes the character of a number of separate narratives. The Greeks, in the different states, did not consider themselves as constituting a single nation or people, although they were in some measure united by similarity of origin, language, religion, and manners. It was not, indeed, till a comparatively late period that they had any name for the entire country; the name then assumed was Hellas. The term Grecia (Greece) was conferred by the Romans, and has since been generally employed.

EARLY HISTORY AND MYTHOLOGY.

The history of the Grecian states commences about 1800 years before Christ, when the Egyptians on the opposite side of the Mediterranean were in a high state of civilisation; but the portion of history which precedes 884 B.C. is understood to be fabulous, and entitled to little credit. According to the Greek poets, the original inhabitants of the country, denominated Pelasgians, were a race of savages, who lived in caves, and clothed themselves with the skins of wild beasts. Uranus, an Egyptian prince, landed in the country, and became the father of a family of giants, named Titans, who rebelled against, and dethroned him. His son Saturn, who reigned in his stead, in order to prevent the like misfortune from befalling himself, ordered all his own children to be put to death as soon as they were born. But one named Jupiter was concealed by the mother, and reared in the island of Crete, from which in time he returned, and deposed his father. The Titans, jealous of this new prince, rebelled against him, but were vanquished and expelled for ever from the country.

Jupiter divided his dominions with his brothers Neptune and Pluto. The countries which he reserved to himself he governed with great wisdom, holding his court on Mount Olympus, a hill in Thessaly, 9000 feet in height, and the loftiest in Greece. Any truth which there might be in the story of the Titans and their princes was completely disguised by the poets, and by the popular imagination. Saturn, Jupiter, Neptune, and Pluto, were looked back to, not as mortals, but as deities; and the top of Mount Olympus was supposed to be the heavenly residence of the gods, by whom the affairs of mortals were governed. And for ages after the dawn of philosophy, these deified sons of Saturn, and numberless others connected with them, were the objects of the national worship, not only among the Greeks, but also among the Romans.

At an uncertain but very early date an Asiatic people named the Hellenes immigrated into Greece, in some cases expelling the Pelasgi, and in others intermingling with them, so that in process of time all the inhabitants of Greece came to be called Hellenes. They were, however, divided into several tribes, the principal of which were the Dorians, Æolians, and Ionians, each of whom spoke a dialect differing in some respects from those made use of by the others. These dialects were named the Doric, Æolic, and Ionic, in reference to the tribes which used them; and a fourth, which was afterwards formed from the Ionic, was named the Attic, from its being spoken by the inhabitants of Attica.

In the year 1556 B.C., Inachus, a Phœnician adventurer, is said to have arrived in Greece at the head of a small band of his countrymen. Phœnicia, a petty state on the coast of the Mediterranean, in Asia Minor, was at this time one of a few countries, including Egypt and Assyria, in which some degree of civilisation pre-

vailed, while all the rest of the people of the earth remained in their original barbarism, like the Pelasgians before the supposed arrival of Uranus. Navigation for the purposes of commerce, and the art of writing, are said to have originated with the Phœnicians. On their arrival in Greece, Inachus and his friends founded the city of Argos, at the head of what is now called the Gulf of Napoli, in the Peloponnesus.

Three hundred years after this event (1556 B.C.), a colony, led by an Egyptian named Cecrops, arrived in Attica, and founded the celebrated city of Athens, fortifying a high rock which rose precipitously above the site afterwards occupied by the town.

Egypt is situated in the north-eastern part of Africa. It is bounded on the north by the Mediterranean Sea, and is watered by the great river Nile, the periodical overflowings of which, by supplying the moisture necessary for vegetation, render the soil very fertile. From this country, which had at a very early period made considerable advances in some of the arts and sciences (see ANCIENT HISTORY), Cecrops imported much valuable knowledge to the rude inhabitants of Attica, whom he had persuaded or obliged to acknowledge him as their chief or king. He placed his rocky fortress under the protection of an Egyptian goddess, from whose Greek name, *Athena* (afterwards changed by the Latins into Minerva), the city which subsequently rose around the eminence was called Athens.

About the year 1493 B.C., Cadmus, a Phœnician, founded the city of Thebes in Bœotia; and among other useful things which he communicated to the Greeks, he is said to have taught them alphabetical writing, although it is certain that that art did not come into common use in Greece until several centuries after this period.

The city of Corinth, situated on the narrow isthmus which connects the Peloponnesus with the mainland of Greece, was founded in the year 1520 B.C., and from its very advantageous position on the arm of the sea to which it anciently gave a name, but which is now known as the Gulf of Lepanto, it very soon became a place of considerable commercial importance. Sparta or Lacedæmon, the celebrated capital of Laconia in the Peloponnesus, is said to have been founded about 1520 B.C. by Lelex, an Egyptian.

In the year 1485 B.C., an Egyptian named Danäus, accompanied by a party of his countrymen, arrived at Argos, the inhabitants of which must have been at that period in an exceedingly rude state, since it is said that he excited their gratitude so much by teaching them to dig wells, when the streams from which they were supplied with water were dried up with the heat, that they elected him as their king.

Fully more than a century after this period (about 1350 B.C.), Pelops, the son of a king of Phrygia, a country in Asia Minor, settled in that part of Greece which was afterwards called from him Peloponnesus, or the island of Pelops, where he married the daughter of one of the native princes, whom he afterwards succeeded on the throne. In the course of his long reign, he found means to strengthen and greatly extend his influence in Greece, by forming matrimonial alliances between various branches of his own house and the other royal families of the Peloponnesus. Agamemnon, king of Mycenæ, in Argolis, who was, according to the poet Homer, the commander-in-chief of the Greeks at the siege of Troy, and Menelāus, king of Sparta, on account of whose wrongs that war was undertaken, were descended from this Phrygian adventurer.

Hercules, a Theban prince, was another of the descendants of Pelops. The numerous and extraordinary feats of strength and valour of Hercules excited the admiration of his contemporaries, and being afterwards exaggerated and embellished by the poets, caused him at length to be regarded as a person endowed with supernatural powers, and even to be worshipped as a god.

According to the poets, Hercules was the son of the god Jupiter, and of Alcmena, daughter of Electryoné, king of Mycenæ. Before his birth, his mother married Amphitryon, king of Thebes, by whom the infant Hercules was adopted as his son. While yet a child in the cradle, he is fabled to have crushed to death two snakes which the goddess Juno had sent to destroy him. After he grew up, he performed many heroic and extraordinary actions, commonly called his 'labours.' Among these was his killing a dreadful lion, by clasping his arms round its neck, and so choking it.

Another of the fabled labours of Hercules was his destroying the Hydra of Lerna. This was a monstrous seven-headed serpent, which haunted the small lake of Lerna, now Molini, in Argolis, and filled with terror the inhabitants of the whole of that part of the country. Hercules dauntlessly attacked it, and struck off several of its heads with his club. But these wonderful heads were no sooner beaten off than they grew on again, so that it seemed an impossibility to kill a monster whose injuries were so quickly repaired. At last, one of the companions of Hercules having, at the hero's request, seared with a hot iron the necks of the hydra as fast as each decapitation was accomplished, it was discovered that the heads did not spring again, and Hercules was thus enabled to complete the destruction of this terrible reptile.

Another achievement of this hero, to which allusion is often made by modern writers, was the cleansing of the stables of Augeas, king of Elis, in which three hundred cattle had been kept for thirty years, without any attempt having been made during all that time to remove the accumulating filth. This much-required purification the hero accomplished by turning into the stables a river which flowed in the vicinity. Hercules also undertook an expedition for the purpose of carrying off the cattle of Geryon, king of Gades, now Cadiz, in Spain. Geryon is represented as having been a monster with three heads, and a proportionate supply of arms and legs, and to have ruled over the greater part of Spain with the utmost cruelty. He was killed by Hercules, who brought away his valuable flocks in triumph. In this expedition he is said to have formed the Strait of Gibraltar, in order to open a communication between the Mediterranean and Atlantic, by rending asunder Spain and Africa, which had until then been united. Two mountains, Calpe and Abyla (one on each side of the Strait), raised by him in the execution of this task, were called the Pillars of Hercules, and the appellation is not unfrequently made use of by authors even at the present day.

After many adventures in foreign countries, he returned to the Peloponnesus, where he took to wife a lady named Dejanira. For a while they lived happily together; but at last, believing that Hercules had become less attached to her than formerly, his consort presented him with a tunic steeped in a mixture, which she expected to operate as a charm in regaining for her his affections, but which was, in reality, a deadly poison, artfully placed in her hands by an enemy. As soon as Hercules had put on this fatal garment, he was attacked with the most excruciating pain, and being anxious to put a period as speedily as possible to his agonies, he stretched himself upon a funeral pile, and causing a friend to set it on fire, was burned to ashes. His spirit is said to have ascended to heaven in a chariot drawn by four horses, which Jupiter, the king of the gods, transmitted to earth for the purpose, and Juno, the celestial queen, gave him her daughter Hebe as his wife. Dejanira, on learning the unfortunate result of her attempt to recover her husband's love, put an end to her own life in despair.

Such are the wild fictions which have been handed down respecting Hercules, who was in reality nothing more than a Greek prince of great valour and bodily strength. Having been expelled from Mycenæ by a rival claimant of the throne of that state, he appears to have spent the greater part of his life in wandering over Greece at the head of a band of military followers, sometimes attacking and destroying the robber chiefs and petty tyrants who at that rude and unsettled period abounded in all parts of the country, and on other

occasions engaging in predatory expeditions himself. His character bears no slight resemblance to that of the military chieftains who flourished in our own country a few hundred years ago, and who, with somewhat confused notions of right and wrong, were equally ready to succour the weak against a powerful oppressor, and to attack and plunder an enemy, or even, in many cases, an unoffending neighbour, whose numerous flocks offered a tempting booty.

During the lifetime of Hercules (1263 B.C.), Jason, a prince of Thessaly, made a voyage to Colchis, a country on the eastern side of the Euxine or Black Sea. His enterprise was afterwards greatly celebrated under the name of the Argonautic Expedition, from Argo, the vessel in which he sailed. This ship is generally referred to by the ancients as the first that ever ventured on a long voyage. It is uncertain what was the real object of the Argonautic expedition, although it seems probable that, as Colchis was rich in mines of gold and silver, Jason and his companions, among whom were Hercules and several other persons of distinction, were actuated by a desire to rob the country of some of its valuable metals. The poets, however, tell us a different story. Phryxus and Hellé, the son and daughter of Athamus, king of Thebes, being compelled, according to the poetical account, to quit their native country to avoid the cruelty of their stepmother, mounted on the back of a winged ram with a fleece of gold, and were carried by this wonderful animal through the air towards Colchis, where an uncle of theirs, named Ætes, was king. Unfortunately, as they were passing over the strait now called the Dardanelles, which connects the Ægean Sea with the Propontis, or Sea of Marmora, Helle became giddy, and falling into the water, was drowned. From her, says the legend, the strait was named the Hellespont, or Sea of Helle.

When Phryxus arrived in Colchis, he sacrificed his winged ram to Jupiter, in acknowledgment of divine protection, and deposited its golden fleece in the same deity's temple. He then married the daughter of Ætes, but was afterwards murdered by that king, who wished to obtain possession of the golden fleece. To avenge Phryxus's death, Jason, who was his relation, undertook the expedition to Colchis, where, after performing several marvellous exploits, he not only obtained the golden fleece, but persuaded Medea, another daughter of King Ætes, to become his wife, and to accompany him back to Greece.

One of the persons associated with Jason in the Argonautic expedition was Theseus, a hero almost as celebrated as Hercules himself. His father, Ægéus, was king of Athens, and his mother, Æthra, was the daughter of Pittheus, king of Trœzen, in Argolis. An insurrection which broke out in Attica obliged Ægeus to leave Æthra at her father's court, before Theseus was born, and to repair in haste to Athens. Before his departure, he conducted his wife to a lonely spot in the vicinity of Trœzen, where there stood a large rock with a cavity in the centre. In this hollow he placed a pair of sandals and a hunting-knife, and after covering them over with a piece of marble of great weight, he addressed Æthra in the following words:—'If our child shall prove a boy, let his removal of this stone be one day the proof of his strength; when he can do this, inform him of his parentage, and send him with the tokens it covers to me in Athens.'

When Theseus had arrived at manhood, his mother, remembering the words of Ægéus, took him to the rock where the tokens were deposited, and desired him to try to lift off the mass of marble which his father had placed above them. Being a youth of uncommon strength, he accomplished this with ease, upon which Æthra communicated to him the rank of his father, and giving him the sandals and the hunting-knife, charged him to bear them to Ægeus at Athens.

Trœzen, where the young prince of Athens was nurtured, lay on the western shore of the gulf which separates the Peloponnesus from Attica. As the journey to Athens by land was both circuitous and dangerous, Theseus was advised to cross to Attica by water. But his lofty spirit could not brook the idea of shrinking from danger, and he resolved to proceed to his destination overland. Hercules had before this time destroyed many of the robber chiefs who infested Greece, but notwithstanding all his exertions, there were numbers still remaining; and as Theseus proceeded along the coasts of the Saronic gulf, he encountered and discomfited not a few of these marauders. Among others, he is said to have destroyed a cruel chieftain named Procrustes, who had a bed on which he stretched his captives, shortening or lengthening their bodies to correspond with the size of the bed, by either barbarously cutting off a portion of their limbs, or racking them out, as the case might be. After many toils and perils, Theseus arrived safe in Athens; and Ægeus, recognising him by the tokens he brought, presented him to the people as the heir to the throne.

The fame of his warlike exploits rendered Theseus a favourite with the Athenians; and soon after his arrival among them, he took a step which greatly added to his popularity. In consequence of their want of success in a war with Minos, a celebrated king of Crete, the Athenians had been obliged to send to that sovereign an annual tribute of seven young men and as many young girls. These victims, it is probable, were, on their arrival in Crete, condemned to slavery; but the popular belief of those superstitious times was, that they were thrown into a labyrinth constructed by an ingenious person named Dædalus, where they were devoured alive by a monster called a Minotaur (*taurus*, a bull), one-half of whose body resembled a man, and the other a bull.

When the time came round for selecting by lot the annual victims, Theseus, observing the horror of those on whom the lot fell, and the deep sympathy which was universally felt for their unhappy fate, resolved to make a bold effort to obtain the abrogation of the cruel tribute. For that purpose he voluntarily enrolled himself as one of the victims, and was sent to Crete along with the others. On his arrival there, he was well received by Minos, who had already heard of his heroic deeds, and who admired the warmth of that patriotism which had led the Athenian prince thus to offer himself up a voluntary sacrifice for the benefit of his country.

On further acquaintance, Minos conceived so high an opinion of Theseus, that he gave him his daughter Ariadné in marriage, and relinquished his claim to the humiliating tribute which he had hitherto exacted from the Athenians. Theseus then returned to Athens, where he was received with every demonstration of public respect. Annual sacrifices and festivals were instituted in commemoration of his patriotic conduct, and the vessel in which he had made his voyage to Crete was carefully preserved for many centuries, being from time to time repaired, until at last it became a question, which was gravely discussed by the learned, whether it was or was not to be still regarded as the vessel of Theseus, after its several parts had been so frequently renewed.

Theseus succeeded his father on the Athenian throne (1234 B.C.), and by his wise regulations greatly consolidated the strength and increased the prosperity of his kingdom. Cecrops, the founder of Athens, had divided Attica into twelve districts, each of which possessed its own magistracy and judicial tribunals. As the country advanced in wealth and population, these districts became less closely connected with each other, and at the period of the accession of Theseus, they could hardly be regarded in any other light than as so many little independent communities, whose perpetual disputes kept the whole district in broils and confusion. But Theseus had influence enough with all parties to obtain their consent to the abolition of the separate jurisdictions, and to the fixing of all civil and judicial authority in the capital. He at the same time voluntarily resigned into their hands a portion of his own power. Having divided the people into three classes—the nobles,

the artisans, and the cultivators of the soil—he intrusted the first of these with the administration of public affairs, and the dispensation of justice, while he conferred upon every freeman or citizen, without distinction of class, a vote in the legislative assemblies. The command of the army, and the presidency of the state, he retained in his own person.

To strengthen the political union of the various districts of his kingdom by the tie of a common religion, he instituted a solemn festival, to be celebrated annually at Athens by all the inhabitants of Attica, in honour of Minerva, the tutelary deity of the city. This festival he denominated Panathenæa, or the Feast of all the Athenians, the name by which the whole of the people of Attica were thenceforth called.

The wise and liberal policy of Theseus caused Attica to advance considerably beyond the other states of Greece in prosperity and civilisation; and the ancient historian, Thucydides, informs us that the Athenians were the first of the Greeks who laid aside the military dress and arms, which till now had been constantly worn. The example of Athens was not lost on the other Grecian communities, all of which gradually adopted, to a greater or less extent, those political institutions which had conferred so many advantages upon Attica.

Notwithstanding the judicious and exemplary conduct of Theseus in the early part of his reign, he appears to have afterwards allowed his restless and adventurous disposition to hurry him into many extravagances, and even crimes, by which he forfeited the respect of his people, and brought disgrace and suffering on his latter years. If we may believe the traditionary accounts, he accompanied Hercules in some of his celebrated expeditions, and assisted by Pirithoüs, a king of Thessaly, engaged in many martial and predatory adventures, conformably rather with the very imperfect morality and rude manners of the age, than with his own previous character. There reigned in Lacedæmon at this period a king named Tyndarus, who had a beautiful daughter called Helen, and according to the ancient historians, Theseus and his friend Pirithous formed the design of stealing away this young lady, and a princess of Epirus named Proserpine. They succeeded in carrying off Helen; but in their attempt to obtain Proserpine, they fell into the hands of her father, by whom Pirithoüs was put to death, and Theseus thrown into prison. Meanwhile, Castor and Pollux, the twin-brothers of Helen, who were afterwards deified, and whose names have been bestowed upon one of the signs of the Zodiac (Gemini), rescued their sister from the men to whom Theseus had given her in charge, and ravaged Attica in revenge for the injury they had received from its king.

Theseus was afterwards released from imprisonment by the assistance of Hercules, and returned home; but the Athenians had become so offended with his conduct, and were so angry at his having exposed them to ill-treatment from the Lacedæmonians by his wicked attempt upon Helen, that they refused to receive him again as their sovereign. He therefore withdrew into exile, and soon after died in the island of Scyros. The Athenian people, however, never forgot the benefits he had in his wiser days conferred upon the state; and many centuries after his death, his bones, or some which were supposed to be his, were conveyed to Athens with great pomp, and a splendid temple was erected above them to his memory.

The Lacedæmonian princess who was stolen away by Theseus afterwards became the occasion of a celebrated war. The fame of her great beauty having spread far and wide, many of the princes of Greece asked her from her father Tyndarus in marriage; but he, being fearful of incurring the enmity of the rejected suitors, declined showing a preference for any of them. Assembling them all, he bound them by an oath to acquiesce in the selection which Helen herself should make, and to protect her against any attempts which might afterwards be made to carry her off from the husband of her choice. Helen gave the preference to Menelaus, a grandson of Pelops, and this successful suitor, on the death of Tyndarus, was raised to the Spartan throne.

At this period, in the north-western part of Asia Minor, on the shores of the Hellespont and the Ægean Seas, there existed a kingdom, the capital of which was a large and well-fortified city named Troy, or Ilium. Priam, the king of Troy, had a son whose name was Paris; and this young chief, in the course of a visit to Greece, resided for a time in Sparta at the court of Menelaus, who gave the Asiatic stranger a very friendly reception. Charmed with Helen's beauty, Paris employed the opportunity afforded by a temporary absence of her husband to gain her affections, and persuade her to elope with him to Troy. It was not, according to the old poets, to his personal attractions, great as they were, that Paris owed his success on this occasion, but to the aid of the goddess of Love, whose favour he had won by assigning to her the palm of beauty, on an occasion when it was contested between her and two other female deities.

When Menelaus returned home, he was naturally wroth at finding his hospitality so ill requited; and after having in vain endeavoured, both by remonstrances and threats, to induce the Trojans to send him back his queen, he applied to the princes who had formerly been Helen's lovers, and called upon them to aid him, according to their oaths, in recovering her from her seducer. They obeyed the summons; and all Greece being indignant at the insult offered to Menelaus, a general muster of the forces of the various states took place at Aulis, a seaport town of Bœotia, preparatory to their crossing the Ægean to the Trojan shore. This is supposed to have happened in the year 1194 B.C.

Of the chiefs assembled on this occasion, the most celebrated were Agamemnon, king of Mycenæ; Menelaus, king of Sparta; Ulysses, king of Ithaca; Nestor, king of Pylos; Achilles, son of the king of Thessaly; Ajax, of Salamis; Diomedes, of Ætolia; and Idomeneus, of Crete. Agamemnon, the brother of the injured Menelaus, was elected commander-in-chief of the confederated Greeks. According to some ancient authors, this general was barbarous enough to sacrifice his daughter Iphigenia, to induce the gods to send a favouring gale to the Grecian fleet when it was detained by contrary winds in the port of Aulis; but as the earliest writers respecting the Trojan war make no mention of this unnatural act, it is to be hoped that it never was performed.

The Grecian armament consisted of about 1200 vessels, with from 50 to 120 men in each, and the army which warred against Troy is supposed to have amounted altogether to about 100,000 men. The Trojans, although reinforced by auxiliary bands from Assyria, Thrace, and Asia Minor, were unable to withstand the Greeks in the open country, and they therefore soon retired within the walls of their city.

In those early times men were unskilled in the art of reducing fortified places, and the Greeks knew of no speedier way of taking Troy than blockading it till the inhabitants should be compelled by famine to surrender. But here a new difficulty arose. No arrangements had been made for supplying the invaders with provisions during a lengthened siege; and after they had plundered and laid waste the surrounding country, they began to be in as great danger of starvation as the besieged. The supplies which arrived from Greece were scanty and irregular, and it became necessary to detach a part of the beleaguering forces to cultivate the plains of the Chersonesus of Thrace, in order to raise crops for the support of themselves and their brethren in arms.

The Grecian army being thus weakened, the Trojans were encouraged to make frequent sallies, in which they were led generally by the valiant Hector, Priam's eldest and noblest son. Many skirmishes took place, and innumerable deeds of individual heroism were performed, all of which led to no important result, for the opposing armies were so equally matched, that neither

could obtain any decisive advantage over the other. At length, after a siege of no less than ten years, in the course of which some of the most distinguished leaders on both sides were slain, Troy was taken, its inhabitants slaughtered, and its edifices burnt and razed to the ground.

According to the poets, it was by a stratagem that this famous city was at last overcome. They tell us that the Greeks constructed a wooden horse of prodigious size, in the body of which they concealed a number of armed men, and then retired towards the sea-shore, to induce the enemy to believe that the besiegers had given up the enterprise, and were about to return home. Deceived by this manœuvre, the Trojans brought the gigantic horse into the city, and the men who had been concealed within it, stealing out in the night-time, unbarred the gates, and admitted the Grecian army within the walls. The siege of Troy forms the subject of Homer's sublime poem, the 'Iliad,' in which the real events of the war are intermingled with many fictitious and supernatural incidents.

The Greek princes discovered that their triumph over Troy was dearly paid for by their subsequent suffering and the disorganisation of their kingdoms at h[illegible] Ulysses, if we may believe the poets, spent ten yea[illegible] wandering over seas and lands before arriving in [illegible] island of Ithaca. Others of the leaders died or we[illegible] shipwrecked on their way home, and several of those who succeeded in reaching their own dominions, found their thrones occupied by usurpers, and were compelled to return to their vessels, and seek in distant lands a place of rest and security for their declining years. But the fate of Agamemnon, the renowned general of the Greeks, was the most deplorable of all. On his return to Argos, he was assassinated by his wife Clytemnestra, who had formed an attachment during his absence to another person. Agamemnon's son, Orestes, was driven into exile, but afterwards returned to Argos, and putting his mother and her accomplices to death, established himself upon the throne.

About eighty years after the termination of the Trojan war, an extensive revolution took place in the affairs of Greece, in consequence of the subjugation of nearly the whole Peloponnesus by the descendants of Hercules. It has already been mentioned that that hero, who was a member of the royal family of Mycenæ or Argos, had been driven into exile by some more successful candidate for the throne of that state. After the hero's death, his children sought refuge in Doris, the king of which became subsequently so much attached to Hyllus, the eldest son of Hercules, that he constituted him the heir of his throne. Twice the Heraclidæan princes unsuccessfully attempted to establish themselves in the sovereignty of the Peloponnesus, which they claimed as their right; but on the third trial, they accomplished their object. In the year 1104 B.C., three brothers named Temenus, Cresphontes, and Aristodemus, said to have been the great-grandsons of Hyllus, invaded the Peloponnesus at the head of the Dorians, and conquered the greater part of it, with the exception of the province of Arcadia, the mountainous character of which enabled its inhabitants to defend it with success against the invaders.

Temenus obtained the kingdom of Argos, Cresphontes established himself in Messenia, and as Aristodemus had died during the war, his twin sons Eurysthenes and Procles shared between them the throne of Sparta. The thrones of Corinth and Elis were occupied by other branches of the Heraclidæan family. The Dorian troops were rewarded with the lands of the conquered inhabitants, who were driven out of the Peloponnesus, or reduced to slavery. Great numbers of the Peloponnesians, who were expatriated by the Dorian invaders, passed over into Asia Minor, where they founded several colonies in a district afterwards called *Æolis*, from the name of the people by whom these colonies were established. Others took refuge in Attica, where the Athenians received them in a friendly manner. This, it would appear, gave offence to the new rulers of the Peloponnesian states, and war was commenced between the Dorians and the Athenians. In the year 1070 B.C., Attica was invaded by a numerous army of the Peloponnesians, and Athens itself seemed menaced with destruction. This emergency produced a display of patriotic devotion on the part of Codrus, the Athenian king, which has rarely been paralleled in the annals of mankind, and deserves to be held in everlasting remembrance:—

At Delphi in Phocis there was a temple of Apollo, to the priests of which the Greeks were wont to apply for information regarding future events, in the same manner as the people of comparatively recent times were accustomed to consult astrologers, soothsayers, and other artful impostors on similar questions. Now Codrus had learned that the Peloponnesians had received at Delphi a prophetical response, to the effect that they should not be victorious in the war, if they did not kill the Athenian king. Determined to save his country at the expense of his own life, Codrus disguised himself in a peasant's dress, and entering the [illegible]onnesian camp, provoked a quarrel with a soldier, [illegible]m he was killed.

[illegible]ot long until the dead body was recognised [illegible] the Athenian king, and the Peloponne[illegible]bering the condition on which the oracle [illegible]ed them success, were afraid to continue [illegible] any longer, and hastily retreated into their own territories. The Athenians were filled with admiration when they heard of the noble conduct of their monarch, and in the height of their gratitude, they declared that none but Jupiter was worthy of being their king after such a prince as Codrus.

It is supposed that they were partly induced to make this declaration by finding the sons of Codrus evince an inclination to involve the country in a civil war regarding the succession to the throne. The Athenians therefore abolished royalty altogether, and appointed Medon, Codrus's eldest son, under the title of *Archon*, as chief magistrate of the republic for life; the office to be hereditary in his family as long as its duties should be performed to the satisfaction of the assembly of the people. And as Attica was overcrowded with the Peloponnesian refugees, these, together with a large body of Athenians, were sent into Asia Minor, under the charge of Androclus and Neleus, the younger sons of Codrus, to plant colonies to the south of those already formed in Æolia. The settlers founded twelve cities, some of which afterwards rose to great wealth and splendour. *Ionia* was the name bestowed upon the district, in reference to the Ionic stock from which the Athenians drew their descent.

Several Dorian colonies in Caria, a province still farther south than Ionia, completed the range of Grecian settlements along the western coast of Asia Minor. Cyprus, Rhodes, the coast of Thrace, and the islands of the Ægean Sea, together with a considerable portion of Italy and Sicily, and even of France and Spain, were also colonised by bands of adventurers, who at various periods emigrated from Greece; so that, in process of time, the Grecian race, language, religion, institutions, and manners, instead of being confined to the comparatively small country constituting Greece proper, were diffused over a very extensive region, comprising the fairest portions of Europe and of western Asia.

While this work of colonisation was going forward, the parent states of Greece were torn with internal dissensions, and were perpetually harassing each other in wars, of which the objects and incidents are now equally uncertain. Almost all that is known of the history of the two centuries immediately following the death of Codrus is, that they were characterised by great turbulence and confusion, and that, during their lapse, many of the Grecian states and colonies followed the example of Athens by abolishing monarchy. Others did not, till a later period, become republican, and Sparta long retained the singular form of regal government established there at the accession of the twin brothers

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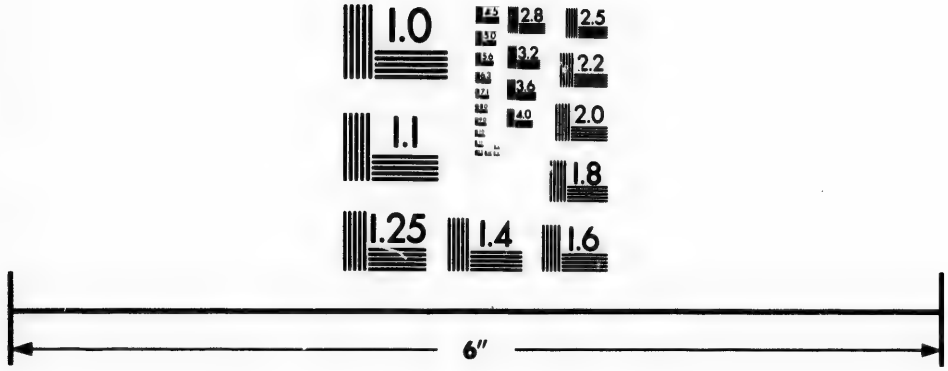

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Eurysthenes and Procles, the descendants of whom continued for several centuries to reign jointly in Lacedæmon, though, practically speaking, no state of Greece was more thoroughly republican in many important respects.

Greece had been all along divided into a number of independent states, and after the abolition of kingly government, several of these were split up into as many distinct republics as the state contained of towns. These divisions of the country, and the obstacles which the almost incessant wars interposed to a free communication between the inhabitants of the different districts, necessarily prevented the advancement of the Greeks in knowledge and civilisation; but fortunately, a king of Elis, named Iphitus, at length devised an institution by which the people of all the Grecian states were enabled, notwithstanding their quarrels and wars with one another, to meet periodically on friendly terms, and communicate to each other such information as might be useful for the improvement and welfare of the whole.

This institution was the Olympic Festival. From a very remote period, the Greeks had been accustomed to engage in contests of strength and agility during their times of festivity, and also at the funerals of distinguished personages. Iphitus conceived the idea of establishing a periodical festival in his own dominions for the celebration of these ancient games, and of religious rites in honour of Jupiter and Hercules; and having obtained the authority of the Delphian oracle for carrying his design into execution, he instituted the festival, and appointed that it should be repeated every fourth year at Olympia, a town of Elis.

To this festival he invited all the people of Greece; and that none might be prevented from attending it by the wars in which any of the states might be engaged, the Delphic oracle commanded that a general armistice should take place for some time before and after each celebration. The date of the establishment of the Olympic Games (884 B.C.) was afterwards assumed by the Greeks as the epoch from which they reckoned the progress of time; the four years intervening between each recurrence of the festival being styled an *Olympiad*.

Three other institutions of a similar nature were afterwards established—namely, the Isthmian Games, celebrated near Corinth; the Pythian, at Delphi; and the Neméan, in Argolis. These took place on the various years which intervened between the successive festivals at Olympia; but although they acquired considerable celebrity, none of them rose to the importance and splendour of that of Iphitus. The games which were celebrated at the festivals consisted of foot and chariot races, wrestling and boxing matches, and other contests requiring strength and agility, together with competitions in poetry and music. The victors were crowned with an olive wreath; an honour which it was esteemed by the Greeks one of the highest objects of ambition to attain.

Mythology and Religious Rites.

The religious beliefs and observances of the Greeks, constituting their mythology, are intimately connected with the fabulous and poetical portion of their history. It has already been stated that Uranus, his son Saturn, and his grandsons Jupiter, Neptune, and Pluto, appear to have been the chiefs of a colony of Egyptians who settled in Greece at an exceedingly remote period, and that after their death their ignorant posterity came in course of time to regard them as gods, and to pay them divine honours accordingly. Some, however, are disposed to think that the Greeks borrowed their notions respecting these and several others of their deities from Egypt and Phœnicia, where they had been worshipped long before their introduction into Greece by the colonies from these countries. But whether this was really the case or not, it is certain that the Greeks greatly embellished the history, and augmented the number, of their fabulous divinities, so that at last they amounted to many thousands, of various degrees of dignity and importance.

According to the poets, who were the principal framers and expounders of the Grecian mythology, Jupiter, the chief of the gods, and the ruler of heaven and earth, was the son of Saturn, a god who had been compelled by a powerful and tyrannical brother, named Titan, to promise that he would destroy all his male children. This promise Saturn for some time fulfilled by devouring his sons as soon as they were born; but at last Rhea, his wife, contrived to conceal the birth of Jupiter, Neptune, and Pluto, who thus escaped the fate of their brethren. On discovering that Saturn had male offspring alive in contravention of his engagement, Titan deposed him from his authority, and cast him into prison. But Jupiter, having grown up to manhood, overcame Titan in turn, and restored Saturn to his throne. These vicissitudes, it is to be observed, and others that befell the early divinities, were the result of the decrees of Fate; a power over which the heathen gods are represented as having had no control.

Notwithstanding this filial conduct of Jupiter, he afterwards quarrelled with his father, whom he dethroned and chased into Italy, where Saturn is said to have passed his time in a quiet and useful manner, occupied solely in teaching the rude inhabitants to cultivate and improve the soil. He was afterwards known (under the name of Chronos) as the god of Time, and was usually represented under the figure of an old man, holding in one hand a scythe, and in the other a serpent with its tail in its mouth, in allusion to the destructive influence of time, and the endless succession of the seasons. The rule of Saturn in Italy was productive of so much happiness, that the period ever afterwards was called the Golden Age.

After Saturn had been driven into exile, his three sons divided his dominions amongst them. Jupiter reserved to himself the sovereignty of the heavens and the earth, Neptune obtained the empire of the sea, and Pluto received as his share the sceptre of the infernal regions. Jupiter did not, however, enjoy unmolested his supreme dignity, for the offspring of Titan, a race of terrible giants, set the new deity at defiance, and by piling the mountains named Pelion and Ossa on the top of one another, endeavoured to ascend into heaven, to pluck him from his throne. The gods, in great alarm, fled from their divine abode on Mount Olympus into Egypt, where they concealed their true character by assuming the forms of various animals; but Jupiter, assisted by Hercules, at last succeeded in destroying the giants, and reasserting his sovereign sway. Jupiter is always represented on a throne with thunderbolts in his right hand, and an eagle by his side.

Jupiter took in marriage his sister Juno, who is described as a beautiful but ill-tempered goddess, and is usually depicted as seated in a chariot drawn by two peacocks. Neptune, the brother of Jupiter, and god of the ocean, is painted as a half-naked man, of majestic figure, with a crown on his head, and a trident or three-pronged fork in his hand, drawn in a car over the sea by water horses. Pluto, the remaining brother of Jupiter, and god of the infernal regions, was painted as seated on a throne, with his wife Proserpine by his side, and the three-headed dog Cerberus before him.

Nine of the most important of the deities were considered as the children of Jupiter. Apollo was the god of music, poetry, painting, and medicine; he is represented as a young man, of great elegance of person, with a bow in his hand, and a quiver of arrows at his back. Mars, the god of war, is drawn as an armed man in a car, with an inferior female deity, named Bellona, by his side. Bacchus was the god of wine, and was usually represented as a young man with a cup in one hand, and a spear called a thyrsus in the other. His name has given rise to many phrases in our language expressive of circumstances connected with drinking. Mercury was the messenger of Jupiter, and the god of oratory, of merchandise, and of thieving. He was represented as a youth flying along the air,

with wings at his cap and heels, and a peculiar wand called a caduceus in his hand. Minerva, the goddess of wisdom, was painted as a female of severe aspect, armed on the head and breast, and bearing a spear and shield, while an owl sits by her side. Venus, the goddess of beauty and love, was depicted as a handsome woman, in undress. Diana, the goddess of hunting and of chastity, appeared as a beautiful female, with bow and arrow in her hands, buskins on her limbs, and a crescent on her forehead. Hebé, the goddess of youth, took the form of a blooming young girl, and was said to bear the cup of Jupiter.

Another of the children of Jupiter was Vulcan, who employed himself as an artificer in iron, and hence he has been assumed as the patron of blacksmiths. Jupiter is said to have employed him in fabricating his thunderbolts. The workshop of Vulcan was believed to be underneath the burning mountain Ætna, in Sicily; and the modern term *volcano* is derived from that circumstance.

Besides the other attributes and avocations of Apollo, he was the deity of the sun, having the task confided to him of guiding that luminary in its diurnal course through the heavens. His sister Diana had a similar charge over the moon. Apollo, or Phœbus, as he was also named, had a son called Phaethon, who, being, like many other young people, self-confident and rash, took advantage of the indulgent disposition of his father to obtain from him the charge of the chariot of the sun for one day. But Phaethon had not travelled far on his journey up the heavens, when his fiery steeds became unmanageable, and running away with the sun, they descended so close to the earth, that that body was set on fire. Jupiter perceived what had happened, and fearing that the universe might be consumed, he struck Phaethon dead with a thunderbolt; then, after a good deal of trouble, he extinguished the conflagration, and set the sun once more on its usual course.

None of the heathen deities is more frequently referred to than Cupid, the god of love. He was the son of Venus, and bore the aspect of a beautiful boy. He had a pair of wings, and was furnished with a bow and a quiver of arrows, which he shot into the hearts of those whom he wished to inflame with the tender passion over which he had control.

There was a number of divinities of minor importance. Hymen was the god of marriage, and was represented with a crown of flowers on his head and a lighted torch in his hand. Æolus was the god of the winds, which he kept confined in caverns, except at such times as he chose to let them loose upon the world. Pan was the god of the country. He was horned, and had legs, feet, and a tail resembling those of a goat. His favourite haunt was the vales of Arcadia, where he attracted the shepherds around him in admiration by the sweet sounds of his rustic pipe.

Ceres was the goddess of agriculture, and had a beautiful daughter named Proserpine, who was carried off by Pluto while she was gathering flowers on the plains of Sicily, and installed as the queen of the infernal regions. Ceres, in despair at the loss of her daughter, and uncertain as to her fate, lighted a torch at Mount Ætna, and sought for her over the whole earth. In the course of her wanderings she arrived in Attica, and finding its inhabitants ignorant of husbandry, furnished them with grain, and taught them how to cultivate their fields. She at the same time instituted the secret religious ceremonies at Eleusis, which were afterwards known by the name of the *Eleusinian Mysteries*. Ceres then continued her search for her daughter, and at length obtained information of what had happened to her. She immediately ascended to heaven and demanded redress from Jupiter, who promised to compel Pluto to restore Proserpine, provided she had eaten nothing since her descent into hell. On inquiry, it was ascertained that she had eaten some pomegranates, so that her return to the upper world was, according to the laws of the infernal regions, impracticable. But Jupiter, compassionating her disconsolate parent, ordained that Proserpine should divide her time between her mother and her husband, residing six months with each alternately.

Astræa was the goddess of justice, and during the Golden Age, when men were virtuous and happy, she dwelt, like many other deities, on earth; but after the world became wicked, she bade it a sorrowful farewell, and ascending to heaven, was transformed into the sign of the zodiac which is named *Virgo*, or the Virgin. Themis was the goddess of law, and after the departure of Astræa, she had also to sustain, as well as she was able, the character of the goddess of justice. We see in this, as in some other of these mythic fables, no small degree of meaning.

Inexorable destiny, which governs all things, was personified by three sisters called the *Fates*, who represented the Past, the Present, and the Future. They were poetically described as constantly employed in spinning the thread of human life. One held the distaff, another span, and the third cut the thread when it had reached its appointed length. To the decrees of these stern sisters even Jupiter himself was obliged to bend, and his thunders, which affrighted all the other divinities, were heard by them undisturbed.

The *Furies* were also three in number, and to them belonged the task of punishing the guilty both on earth and in hell. Instead of hair, their heads were covered with twining serpents, and their looks were fierce and terrible. Each of the sister Furies waved a blazing torch in the one hand, while the other wielded a plaited scourge. The latter instrument inflicted remorseless punishment on those who had incurred the anger of the gods. Wars, famine, and pestilence—the penalty of vice and crime—proceeded from these dread sisters, and *Grief*, *Terror*, and *Madness* were painted as their inseparable followers.

These avengers of guilt form a striking contrast to another sisterly trio, to whom the ancients gave the name of the *Graces*. The Graces were named Aglaia, Thalia, and Euphrosyné, and their aspect and attributes corresponded with the common name they bore. They were the daughters of young Bacchus and Venus, and were usually represented as unattired, and linked in each other's arms.

The nine *Muses* were named Thalia, Melpomené, Calliopé, Clio, Erato, Euterpé, Polyhymnia, Terpsichoré, and Urania. They were the patronesses of literature and the fine arts, and resided on Parnassus, a lofty mountain in the district of Phocis. Thalia presided over comedy; Melpomene over tragedy; Erato over amatory poetry; Polyhymnia over lyric poetry; Calliope over heroic or epic poetry and eloquence; Clio over history; Euterpe over music; Terpsichore over dancing; and Urania over the studies of astronomy and astrology.

There was a class of demi-gods, who filled imaginary places in every corner both of earth and sea. The shady groves and flowery vales were peopled by Dryads or wood-nymphs, and Satyrs, a species of rural deities, who, like Pan, had the horns, legs, and feet of a goat. Mountains and streams possessed their guardian gods and goddesses, and every fountain had its Naiad or water-nymph. In short, whatever sound or sight in nature charmed their fancy, the Greeks ascribed the pleasure to the agency of unseen, but beautiful and immortal beings. Physical beauty was, nevertheless, much more prominent than moral in the divinities shaped out by the imagination of the Greeks. Their gods were represented as mingling in the affairs of mortals, and frequently lending their superior power and intelligence to the promotion of schemes of vice and villany. They were animated by envy, malice, and all the evil passions to which men are subject, and they did not hesitate to adopt any measures, however base, to gratify their nefarious purposes.

Yet, strange as it may seem, most of the Greeks appear to have been impressed with sincere religious feelings, and believed in a future state of rewards and punishments. They imagined that, after death, the

souls of men descended to the shores of a dismal and pestilential stream called the Styx, where Charon, a grim-looking personage, acted as ferryman, and rowed the spirits of the dead across the melancholy river, the boundary of the dominions of Pluto. To obtain a passage in Charon's boat, it was necessary that the deceased should have been buried. Those who were drowned at sea, or who were in any other manner deprived of the customary rites of sepulture, were compelled to wander about on the banks of the Styx for a hundred years before being permitted to cross it.

After quitting the vessel of Charon, the trembling shades advanced to the palace of Pluto, the gate of which was guarded by a monstrous dog, named Cerberus, which had three heads, and a body covered with snakes instead of hair. They then appeared before Minos, Rhadamanthus, and Acanthus, the three judges of the infernal regions, by whom the wicked were condemned to torments, and the good rewarded with heavenly pleasures.

Tartarus, the place of punishment, was the abode of darkness and horror. There Tantalus, for a vile crime done in life, remained perpetually surrounded with water, which fled from his lips whenever he attempted to quench his burning thirst, while over his head hung branches laden with the most inviting fruits, which shrunk from his grasp as often as he stretched out his hand to pluck them. There also was Ixion, bound with serpents to the rim of a wheel, which, constantly revolving, allowed no cessation of his agonies. Another variety of punishment was allotted to Sisyphus, who was condemned to the endless task of rolling a huge stone up the side of a steep mountain, which he had no sooner accomplished, than it rolled down again to its former place. On one side criminals were writhing under the merciless lash of the avenging Furies, and on another were to be seen wretches surrounded with unquenchable flames.

Elysium, the abode of the blessed, was a region of surpassing loveliness and pleasure. Groves of the richest verdure, and streams of silvery clearness, were to be met with on every side. The air was pure, serene, and temperate, the birds continually warbled in the woods, and a brighter light than that of the sun was diffused throughout that happy land. No cares nor sorrow could disturb its inhabitants, who spent their time in the untiring enjoyment of those pleasures they had loved on earth, or in admiring the wisdom and power of the gods.

The Greeks were pre-eminently an imaginative people, and accordingly both their mythology and their religious rites were calculated rather to amuse the fancy than to interest the feelings or improve the heart. Their public worship was altogether ceremonial. In magnificent temples they invoked and offered sacrifices to the gods, and the solemn festivals of their religion consisted of pompous processions, public games, dramatic entertainments, feasting, and masquerading. To these were added, in the worship of Bacchus, drunkenness, indecency, uproar, and every species of licentiousness. It was no business of the priests to inculcate lessons of instruction or morality; the only doctrine taught by them was, that the gods demanded slavish adulation, and an outward show of reverence from their worshippers, who would be rewarded with the divine favour in proportion to the abundance and costliness of their offerings.

Besides the public services of religion, there were certain secret rites, performed only by the initiated, in honour of particular divinities. The most remarkable of these mystical observances were the feasts celebrated at Eleusis in Attica, in honour of the goddess Ceres. They were called, by way of eminence, the *Mysteries;* and all who were initiated in them were bound by the most solemn oaths never to reveal them.

The gods were supposed to communicate with men, and to reveal the secrets of futurity by means of oracles, several of which existed in various parts of Greece. One of the earliest, and for some time most celebrated of these, was that of Dodona in Epirus. Near that place there was a grove of oaks, which, according to the superstitious belief of the ancients, chanted the message of Jupiter to devout inquirers. Black pigeons were also said to frequent this grove, and to give oracular responses. The oracle at Dodona is believed to have owed its origin to an artful woman, who had been stolen from a temple of Jupiter in Egypt, and sold as a slave in Epirus. To escape from the evils of her degraded condition, she resolved to work upon the ignorance and credulity of those among whom she had been brought; and stationing herself in the grove of oaks, which afterwards became so famous, she gave out that she was inspired by Jupiter, and could foretell future events. The scheme succeeded, and she soon acquired great repute for her skill in divination; and after her death, other artful persons were not backward in embracing a profession which was rewarded both with profit and respect.

But by far the most celebrated of the Grecian oracles was that of Apollo at Delphi, a city built on the slopes of Mount Parnassus, in Phocis. At a very remote period, it had been discovered that from a deep cavern in the side of that mountain an intoxicating vapour issued, the effect of which was so powerful as to throw into convulsions both men and cattle. The rude inhabitants of the surrounding district, unable to account for this phenomenon, conceived that it must be produced by supernatural agency, and regarded the incoherent ravings of those who had inhaled the noxious vapour as prophecies uttered under the inspiration of some god. As the stupifying exhalation ascended out of the ground, it was at first conjectured that the newly-discovered oracle must be that of the very ancient goddess *Earth;* but Neptune was afterwards associated with this divinity, as an auxiliary agent in the mystery. Finally, the whole credit of the oracle was transferred to Apollo. A temple was soon built on the hallowed spot, and a priestess, named the *Pythoress*, was appointed, whose office it was to inhale, at stated intervals, the prophetic vapour. To enable her to do so without the risk of falling into the cavern, as several persons had previously done, a seat, called a *tripod*, from its having three feet, was erected for her accommodation directly over the mouth of the chasm.

Still, however, the Pythoness held an office which was neither safe nor agreeable. The convulsions into which she was thrown by the unwholesome vapours of the cavern, were in some instances so violent as to cause immediate death, and were at all times so painful, that force was often necessary to bring the [illegible] to the prophetic seat. The unconnected words [illegible] the Pythoness screamed out in her madness were arranged into sentences by the attendant priests, who could easily place them in such an order, and fill up the breaks in such a way, as to make them express whatever was most suitable to the interests of the *shrine*, which was the main object. Lest the oracle should be brought into discredit, care was in general taken to couch the response in language so obscure and enigmatical, that whatever course events should take the prediction might not be falsified, or rather might appear to be verified. It may be observed that, in the course of time, some method of simulating convulsions was most probably adopted by the chief agent in these impositions.

The fame of the Delphic oracle soon became very extensive, and no enterprise of importance was undertaken in any part of Greece, or of its numerous colonies in the islands and along the coasts of the Ægean and Mediterranean Seas, without a consultation of the Pythoness. The presents received from those who resorted to it for counsel, not a few of whom were princes, or influential and wealthy leaders, formed a source of great and permanent revenue to the institution, and not only afforded the officiating priests a comfortable maintenance, but furnished also the means of erecting a splendid temple, instead of the rude edifice which had been originally constructed.

The high veneration in which the Delphic oracle was held, gave its directors a large share of influence in public affairs; an influence which they sometimes exerted in a most commendable manner, in sanctioning and furthering the schemes of the statesmen, legislators, and warriors, who undertook to improve the political systems, reform the laws and manners, or defend the liberties of Greece. Like the Olympian Festival, it also formed a bond of union among the numerous independent communities of Greece, and by lending the authority of the gods to measures of general utility, often repressed petty jealousies and quarrels among the different states, and excited all to study the common welfare.

Even when the rest of Greece was vexed by civil war, the chosen territory of Apollo was undisturbed by the din of arms; and the security which it enjoyed on account of its sacred character, caused Delphi to become a place of deposit for much of the wealth of the states. Lest the fear of divine vengeance should not prove a sufficiently strong consideration to deter the warlike communities by which Delphi was surrounded from plundering a temple in which so much treasure was accumulated, the sanctuary was placed under the special protection of a Directory termed the Amphictyonic Council.

This council consisted of two deputies from each of the principal states of Greece, and its duties were to effect, by its recommendation and authority, a settlement of all political and religious disputes which might arise between the various communities, and to decide upon proposals of peace or war with foreign nations. The date of its establishment is uncertain, but it is supposed to have been in existence as early as the fourteenth or fifteenth century before the Christian era; that is to say, about 200 or 300 years before the war of Troy. Amphictyon, its founder, is asserted by some to have been a king of Attica, and by others to have reigned over not only that district, but the whole of Greece to the south of Thessaly.

In the course of the eleventh century before Christ, the Greeks began to plant colonies in neighbouring countries. The first colonists, as usually happens in the present day, were dissatisfied citizens, who thought they could form happier communities elsewhere. The Æolians founded twelve cities in Asia Minor, the chief of which was Smyrna. The Dorians sent off colonies to Italy and Sicily, founding, in the former, Tarentum and Locri, and in the latter, Agrigentum and Syracuse. In the new settlements, the political system was eminently democratic, and for a long time they enjoyed great prosperity. This prosperity being ascribed at home to their popular institutions, had afterwards the effect of inciting many of the parent states to change their monarchical for a democratic form of government.

SECOND OR AUTHENTIC PERIOD OF HISTORY.

The second and authentic period of Greek history commences in the year 884 B.C., at the institution of the Olympic Festival, when the people had begun to emerge from their primitive barbarism. This festival, as already stated, was instituted by direction of the Delphic oracle, by Iphitus, Prince of Elis, for the patriotic purpose of assembling together, in a peaceful manner, persons from all parts of Greece. The festival was ordained to take place once every four years, in the month corresponding to our July, and to last five days, during which there was to be complete truce, or cessation from war, throughout the Grecian states. Agreeably to the ancient practice at public solemnities, the festival was celebrated by games and various feats of personal skill, and the whole order of procedure was regulated with extraordinary care. All freemen of Grecian extraction were invited to contend, provided they had been born in lawful wedlock, and had lived untainted by any infamous moral stain. No women (the priestesses of Ceres excepted) were permitted to be present. Females who violated this law were thrown from a rock. The competitors prepared themselves during ten months previous at the gymnasium at Elis. During the last thirty days, the exercises were performed with as much regularity as at the games themselves. The festival began in the evening with solemn sacrifices, and the games were commenced the next day at daybreak. These consisted in races on horseback and on foot, in leaping, throwing the discus or quoit, wrestling, and boxing; musical and poetical contests concluded the whole. The honour of having gained a victory in the Olympic Games was very great; it extended from the victor to his country, which was proud of owning him. However rude and boisterous were some of the sports of the Olympic Festival, it is acknowledged by the best authorities that they were attended with manifold advantages to society. It is sufficient barely to mention the suspension of hostilities, which took place not only during the festival, but a considerable time both before and after it. Considered as a kind of religious ceremony, at which the whole Grecian citizens were invited, and even enjoined, to assist, it was well adapted to facilitate intercourse, to promote knowledge, to soften prejudice, and to hasten the progress of civilisation and humanity.

At the first institution of the Olympic Festival, and for one or two centuries afterwards, the condition of Grecian society was primitive, and almost patriarchal, but marked by strong features of heroic dignity, and a certain depth and refinement of thought. The attire of the men was very simple, consisting only of a shirt or close jacket to the body, with a loose robe hanging down over the naked limbs, while performers in the public games were almost naked. The arts, including agriculture, were also little advanced; few persons seemed to have thought of toiling to accumulate wealth; and each community presented, in time of peace, the picture of a large family. That portion of the people constituting the freemen lived much in public, or in the society of their equals, enjoyed common pleasures and amusements, and had daily opportunities of displaying their useful talents in the sight of their fellow-citizens. The frequent disputes between individuals occasioned litigations and trials, which furnished employment for the eloquence and ability of men in the necessary defence of their friends. The numerous games and public solemnities opened a continual source of entertainment, and habituated every man to active physical exercise, and the performance of his duties as a soldier. These were agreeable features in the condition of Grecian society; but there were also some of an opposite character. The people were of an unsettled disposition, never satisfied long with any kind of government which existed amongst them, and very much disposed to wage war against neighbouring states on the most trifling pretences.

The population of the various states was divided into three classes—namely, the citizens, the enfranchised populace, and the slaves. All political power, even in the most democratical of the Grecian communities, was possessed by the first of these classes, while in the oligarchical states, only that small portion of the citizens which constituted the nobility or aristocracy possessed any influence in the management of public affairs. The mechanical and agricultural labours necessary for the support and comfort of the whole, were chiefly performed by the inferior class of free inhabitants, who did not enjoy the privilege of citizenship, and by the slaves, who formed a considerable portion of the population of every state. These slaves were sprung from the same general or parent stock, spoke the same language, and professed the same religion, as their masters. They were in most cases the descendants of persons who had been conquered in war, but were in some instances acquired by purchase. Society being thus based on vicious principles, it is not wonderful that the Grecian states were the scene of constant civil broils.

Sparta—Lycurgus.

At the beginning of this period of Grecian history, our attention is powerfully attracted by a very remarkable

series of proceedings which took place in Lacedæmon, or Laconia, a country of southern Greece, of which the chief city was Sparta. This city being in a state of intestine disorder, it was agreed by many of the inhabitants to invite Lycurgus, the son of one of their late kings, to undertake the important task of preparing a new constitution for his country. Fortified with the sanction of the Delphic oracle, he commenced this difficult duty, not only settling the form of government, but reforming the social institutions and manners of the people. The government he established consisted of two joint kings, with a limited prerogative, and who acted as presidents of a senate of twenty-eight aged men. The functions of the senate were deliberative as well as executive, but no law could be passed without receiving the consent of the assembled citizens. The most remarkable of the arrangements of Lycurgus was his attempt to abolish difference of rank, and even difference of circumstances, among the people. He resolved on the bold measure of an equal division of lands, and actually parcelled out the Laconian territory into 39,000 lots, one of which was given to each citizen of Sparta, or free inhabitant of Laconia. Each of these lots was of such a size as barely sufficed to supply the wants of a single family—for Lycurgus was determined that no person should be placed in such circumstances as would permit of luxurious living.

Lycurgus carried into effect a number of other visionary projects: he abolished the use of money, with the hope of preventing undue accumulation of wealth; prohibited foreigners from entering the country, and the natives from going abroad, in order to preserve simplicity of manners among the people; directed that all men, without distinction of rank or age, should eat daily together at public tables, which were furnished with the plainest food; and finally, ordained that all the children who were born, and seemed likely to be strong, should be reared by public nurses, under a rigid system of privation and personal activity, while the weak infants should be thrown out to the fields to perish. The citizens, when they had attained the age of manhood, were engaged in martial exercises, all labour being left to the slaves, or *helots*, as they were termed; and in short, the whole nation was but a camp of soldiers, and war was reckoned the only legitimate profession. These laws were in some measure suited to the rude condition of the Spartans, but, as being opposed to some of the best and strongest principles in human nature, they could not possibly endure, and there is reason to believe that some of them were not strictly enforced. It is not unusual to see historians use the term *Spartan virtue* with a certain degree of admiration of its quality; but the Spartans had, in reality, no moral dignity, certainly no benevolence, in their virtue, either public or private. They were a small confederacy of well-trained soldiers; and merely as such, deserve no mark of our respect or esteem. The manner in which they used their helots was at once barbarous and cruel. The murder of a serf by a free citizen was not punishable by law; nay, it was even allowable for the young Spartans to lie in wait, as a kind of sport, for any good-looking or saucy-looking slave, and stab him to the heart on the highway. It is certain that at one time, when the helots had stood their masters in good stead in battle, they were desired, by way of reward, to choose out 2000 of their best men, that they might receive their freedom, and be enrolled as Spartans, and that these 2000 men were all silently murdered soon after. At another time, when danger was apprehended from the growing numbers and petty wealth of the boors, the senate enacted the farce of declaring war against them, and coolly murdered many thousands, in order to thin their numbers and break their spirit. Had there been any redeeming trait in the Spartan character to compensate for such barbarity, one would have wondered less at the respect which is sometimes paid them; but their military fame only adds another instance to the many already on record, that the most ignorant and savage tribes make the most dogged soldiers.

Athens.

We now turn to Athens, the capital of Attica, and long the principal seat of Grecian learning and refinement. Athens is said to have been founded by Cecrops, 1550 B.C., and in the most ancient times was called Cecropia. It probably received the name of Athens from the goddess Minerva, who was called also Athena by the Greeks, and to whom an elegant temple had been erected in the city. The old city spread from the mount of the Acropolis over a wide and pleasant vale or low peninsula, formed by the junction of the Cephesus and Ilissus. Its distance from the sea-coast was about five miles. In the course of time Athens became populous and surpassingly elegant in its architecture, while its citizens contrived to take a lead in the affairs of the communities around. At first they were governed by kings, but, as in the case of the Spartan citizens, they became dissatisfied with their existing constitution, and about the year 600 B.C. invited Solon, one of the wisest men in Greece, to reorganise their political constitution. Solon obeyed the summons, and constituted the government on a broad republican basis, with a council of state, forming a judicial court, consisting of 400 members, and called the Areopagus. This court of Areopagus, besides its other duties, exercised a censorship over public morals, and was empowered to punish impiety, profligacy, and even idleness. To this court every citizen was bound to make an annual statement of his income, and the sources from which it was derived. The court was long regarded with very great respect, and the right was accorded to it of not only revising the sentences pronounced by the other criminal tribunals, but even of annulling the judicial decrees of the general assembly of the people. The regulations of Solon were not maintained for any great length of time, although the republican form of government, in one shape or other, continued as long as the country maintained its independence. Clesthenes, the leader of a party, enlarged the democractic principle in the state; he introduced the practice of *ostracism*, by which any person might be banished for ten years, without being accused of any crime, if the Athenians apprehended that he had acquired too much influence, or harboured designs against the public liberty. Ostracism was so called, because the citizens, in voting for its infliction, wrote the name of the obnoxious individual upon a shell (*ostreon*). It is said that Clesthenes was the first victim of his own law, as has happened in several other remarkable cases, ancient and modern.

For a period of about two centuries after the settlement of a republican constitution, there is little of importance to relate in Athenian history. Athens was gradually enlarged, the taste for refinement increased, and various men of sagacious understanding, entitled Philosophers, began to devote themselves to inquiries into the nature of the human mind and the character of the Deity. The principal Grecian philosopher who flourished in this era (550 B.C.) was Pythagoras, a man of pure and exalted ideas, and an able expounder of the science of mind.

THIRD PERIOD OF HISTORY.

The year 490 B.C. closes the gradually-improving period in Grecian history, or second period, as it has been termed; and now commenced an era marked by the important event of an invasion from a powerful Asiatic sovereign.

Persian Invasion.

Darius, king of Persia, having imagined the possibility of conquering Greece, sent an immense army against it in the year just mentioned. Greatly alarmed at the approach of such an enemy, the Athenians applied to the Spartans for aid; but that people had a superstition which prohibited their taking the field before the moon was at the full, and as at the time of the application it still wanted five days of that period, they therefore delayed the march of their

troops. Being thus refused all assistance from their neighbours, the Athenians were left to depend entirely on their own courage and resources. A more remarkable instance of a small state endeavouring to oppose the wicked aggression of an overgrown power, has seldom occurred in ancient or modern times; but the constant exercises and training of the Athenian population enabled them to present a bold, and by no means contemptible front to the invader. War had been their principal employment, and in the field they displayed their noblest qualities. They were unacquainted with those highly-disciplined evolutions which give harmony and concert to numerous bodies of men; but what was wanting in skill they supplied by courage. The Athenian, and also other Greek soldiers, marched to the field in a deep phalanx, rushed impetuously to the attack, and bravely closed with their enemies. Each warrior was firmly opposed to his antagonist, and compelled by necessity to the same exertions of valour as if the fortune of the day had depended on his single arm. The principal weapon was a spear, which, thrown by the nervous and well-directed vigour of a steady hand, often penetrated the firmest shields and bucklers. When they missed their aim, or when the stroke proved ineffectual through want of force, they drew their swords, and summoning their utmost resolution, darted impetuously on the foe. This mode of war was common to the soldiers and generals, the latter being as much distinguished in battle by their strength and courage as their skill and conduct. The Greeks had bows, slings, and darts, intended for the practice of distant hostility; but their chief dependence was on the spear and sword. Their defensive armour consisted (as shown in the fig.) of a bright helmet, adorned with plumes, and covering the head, a strong corslet defending the breast, greaves of brass descending the leg to the feet, and an ample shield, loosely attached to the left shoulder and arm, which turned in all directions, and opposed its firm resistance to every hostile assault. With men thus organised and accoutred, a battle consisted of so many duels, and the combatants fought with all the keenness of personal resentment. The slaughter in such engagements was correspondingly great, the fight seldom terminating till one of the parties was nearly destroyed, or at least greatly reduced in numbers.

It was a people so animated and prepared that the hosts of Persia were about to encounter. Compelled to meet the invaders unassisted, the Athenians were able to march an army of only 9000 men, exclusive of about as many light-armed slaves, into the field. With Miltiades as their leader and commander-in-chief, they met the Persians in battle on the plain of Marathon, thirty miles from Athens, and by great skill and courage, and the force of their close phalanx of spearmen, completely conquered them. Upwards of 6000 Persians were slain on the field, while the number killed of the Athenians was but 192. This is reckoned by historians one of the most important victories in ancient times, for it saved the independence of the whole of Greece. To the disgrace of the fickle Athenians, they afterwards showed the greatest ingratitude to Miltiades, and put him in prison on a charge of favouring the Persians. He died there the year after his great victory. Soon after, the citizens of Athens, on a plea equally unfounded, banished Aristides, an able leader of the aristocratic party in the state, and who, from his strict integrity and wisdom, was usually entitled 'Aristides the Just.' On the banishment of this eminent individual, Themistocles, a person who was more democratic in his sentiments, became the leader of the councils of the Athenians. Meanwhile the Grecian liberties were again menaced by the Persians. Xerxes, son of Darius, marched an army across the Hellespont by a bridge of boats from the Asiatic shore, and led it towards the southern part of Greece. The utmost force that the confederated Greeks could oppose to the countless host of Persians did not exceed 60,000 men. Of these, a band of Spartans, numbering 8000 soldiers, under Leonidas their king, was posted at the pass of Thermopylæ, to intercept the enemy, and here they discomfited every successive column of the Persians as it entered the defile. Ultimately, foreseeing certain destruction, Leonidas commanded all to retire but 300, with whom he proposed to give the Persians some idea of what the Greeks could submit to for the sake of their country. He and his 300 were cut off to a man. Xerxes took possession of Attica and Athens, but in the naval battle with the Athenian fleet at Salamis, which occurred soon after (October 20, 480 B.C.), his army was utterly routed, and its scattered remains retreated into Asia.

By this splendid victory the naval power of Persia was almost annihilated, and the spirit of its monarch so completely humbled, that he durst no longer undertake offensive operations against Greece. Here, therefore, the war ought to have terminated; but so great and valuable had been the spoils obtained by the confederate forces, that they were unwilling to relinquish such a profitable contest. The war, therefore, was continued for twenty years longer, less, apparently, for the chastisement of Persia, than for the plunder of her conquered provinces.

But now that all danger was over, many of the smaller states, whose population was scanty, began to grow weary of the contest, and to furnish with reluctance their annual contingent of men to reinforce the allied fleet. It was, in consequence, arranged that those states whose citizens were unwilling to perform personal service, should send merely their proportion of vessels, and pay into the common treasury an annual subsidy, for the maintenance of the sailors with whom the Athenians undertook to man the fleet. The unforeseen but natural consequence of this was the establishment of the complete supremacy of Athens. The annual subsidies gradually assumed the character of a regular tribute, and were compulsorily levied as such; while the recusant communities, deprived of their fleets, which had been given up to the Athenians, were unable to offer effectual resistance to the oppressive exactions of the dominant state. The Athenians were thus raised to an unprecedented pitch of power and opulence, and enabled to adorn their city, to live in dignified idleness, and to enjoy a constant succession of the most costly public amusements, at the expense of the vanquished Persians, and of the scarcely more leniently-treated communities of the dependent confederacy.

Pericles.

We have arrived at the most flourishing period of Athenian history, during which Pericles rose to distinction, and greatly contributed to the beautifying of the capital. The talents of Pericles were of the very first order, and they had been carefully cultivated by the ablest tutorage which Greece could afford. After serving for several years in the Athenian army, he ventured to take a part in the business of the popular assembly, and his powerful eloquence soon gained him an ascendancy in the national councils; and his power, in fact, became as great as that of an absolute monarch (445 B.C.). Some of the most interesting events of Grecian history now occurred. After a number of years of general peace, a dispute between the state of Corinth and its dependency the island of Corcyra (now Corfu), gave rise to a war which again disturbed the repose of all the Grecian states. Corcyra was a colony of Corinth, but having, by its maritime skill and enterprise, raised itself to a higher pitch of opulence than

its parent city, it not only refused to acknowledge Corinthian supremacy, but went to war with that state on a question respecting the government of Epidamnus, a colony which the Corcyreans had planted on the coast of Illyria. Corinth applied for and obtained aid from several of the Peloponnesian states to reduce the Corcyreans to subjection; while Corcyra, on the other hand, concluded a defensive alliance with Athens, which sent a fleet to assist the island in vindicating its independence. By way of punishing the Athenians for intermeddling in the quarrel, the Corinthians stirred up a revolt in Potidæa, a town of Chalcidice, near the confines of Macedonia, which had originally been a colony of Corinth, but was at this time a tributary of Athens. The Athenians immediately despatched a fleet and army for the reduction of Potidæa, and the Peloponnesians were equally prompt in sending succours to the city. The Corinthians, meanwhile, were actively engaged in endeavouring to enlist in their cause those states which had not yet taken a decided part in the dispute. To Lacedæmon, in particular, they sent ambassadors to complain of the conduct of the Athenians, which they characterised as a violation of a universally-recognised law of Grecian policy—that no state should interfere between another and its dependencies. The efforts of the Corinthians were successful, and almost all the Peloponnesian states, headed by Sparta, together with many of those beyond the isthmus, formed themselves into a confederacy for the purpose of going to war with Athens. Argos and Achaia at first remained neuter. Corcyra, Acarnania, some of the cities of Thessaly, and those of Platæa and Naupactus, were all that took part with the Athenians.

Pericles beheld without dismay the gathering of the storm, but his countrymen were not equally undaunted. They perceived that they were about to be called upon to exchange the idle and luxurious life they were at present leading for one of hardship and danger, and they began to murmur against their political leader for involving them in so alarming a quarrel. They had not at first the courage to impeach Pericles himself, but vented their displeasure against his friends and favourites. Phidias, a very eminent sculptor, whom the great statesman had appointed superintendent of public buildings, was condemned to imprisonment on a frivolous charge; and the philosopher Anaxagoras, the preceptor and friend of Pericles, was charged with disseminating opinions subversive of the national religion, and banished from Athens. Respecting another celebrated individual who at this time fell under persecution, it becomes necessary to say a few words. Aspasia of Miletus was a woman of remarkable beauty and brilliant talents, but she wanted that chastity which is the greatest of feminine graces, and by her dissolute life was rendered a reproach, as she would otherwise have been an ornament, to her sex. This remarkable woman having come to reside in Athens, attracted the notice of Pericles, who was so much fascinated by her beauty, wit, and eloquence, that, after separating from his wife, with whom he had lived unhappily, he married Aspasia. It was generally believed that, for the gratification of a private grudge, she had instigated Pericles to quarrel with the Peloponnesian states, and her unpopularity on this score was the true cause of her being now accused, before the assembly of the people, of impiety and grossly-immoral practices. Pericles conducted her defence in person, and pled for her with so much earnestness, that he was moved even to tears. The people, either finding the accusations to be really unfounded, or unable to resist the eloquence of Pericles, acquitted Aspasia. His enemies next directed their attack against himself. They accused him of embezzling the public money; but he completely rebutted the charge, and proved that he had drawn his income from no other source than his private estate. His frugal and unostentatious style of living must have of itself gone far to convince the Athenians of the honesty with which he had administered the public affairs; for while he was filling the city with temples, porticoes, and other magnificent works of art, and providing many costly entertainments for the people, his own domestic establishment was regulated with such strict attention to economy, that the members of his family complained of a parsimony which formed a marked contrast to the splendour in which many of the wealthy Athenians then lived.

Confirmed in his authority by this triumphant refutation of the slanders of his enemies, Pericles adopted the wisest measures for the public defence against the invasion which was threatened by the Peloponnesians. Unwilling to risk a battle with the Spartans, who were esteemed not less invincible by land than the Athenians were by sea, he caused the inhabitants of Attica to transport their cattle to Eubœa and the neighbouring islands, and to retire, with as much of their other property as they could take with them, within the walls of Athens. By his provident care, the city was stored with provisions sufficient for the support of the multitudes which now crowded it; but greater difficulty was found in furnishing proper accommodation for so vast a population. Many found lodgings in the temples and other public edifices, or in the turrets on the city walls, while great numbers were obliged to construct for themselves temporary abodes in the vacant space within the long walls extending between the city and the port of Piræus.

The memorable contest of twenty-seven years' duration, called 'the Peloponnesian War,' now commenced (431 B. C.). The Spartan king, Archidamus, entered Attica at the head of a large army of the confederates, and meeting with no opposition, proceeded along its eastern coast, burning the towns, and laying waste the country in his course. When the Athenians saw the enemy ravaging the country almost up to their gates, it required all the authority of Pericles to keep them within their fortifications. While the confederates were wasting Attica with fire and sword, the Athenian and Corcyrean fleets were, by the direction of Pericles, avenging the injury by ravaging the almost defenceless coasts of the Peloponnesus. This, together with a scarcity of provisions, soon induced Archidamus to lead his army homewards. He retired by the western coast, continuing the work of devastation as he went along.

Early in the summer of the following year, the confederates returned to Attica, which they were again permitted to ravage at their pleasure, as Pericles still adhered to his cautious policy of confining his efforts to the defence of the capital. But an enemy far more terrible than the Peloponnesians attacked the unfortunate Athenians. A pestilence, supposed to have originated in Ethiopia, and which had gradually spread over Egypt and the western parts of Asia, broke out in the town of Piræus, the inhabitants of which at first supposed their wells to have been poisoned. The disease rapidly advanced into Athens, where it carried off a great number of persons. It is described as having been a species of infectious fever, accompanied with many painful symptoms, and followed, in those who survived the first stages of the disease, by ulcerations of the bowels and limbs. Historians mention, as a proof of the singular virulence of this pestilence, that the birds of prey refused to touch the unburied bodies of its victims, and that all the dogs which fed upon the poisonous relics perished. The mortality was dreadful, and was of course greatly increased by the overcrowded state of the city. The prayers of the devout, and the skill of the physicians, were found equally unavailing to stop the progress of the disease; and the miserable Athenians, reduced to despair, believed themselves to be forgotten or hated by their gods. The sick were in many cases left unattended, and the bodies of the dead allowed to lie unburied, while those whom the plague had not yet reached, openly set at defiance all laws, human and divine, and rushed into every excess of criminal indulgence.

Pericles was in the meantime engaged, with a fleet of 150 ships, in wasting with fire and sword the shores of the Peloponnesus. At his return to Athens, finding

that the enemy had hastily retired from Attica, through fear of the contagion of the plague, he despatched the fleet to the coast of Chalcidice, to assist the Athenian land forces who were still engaged in the siege of Potidæa—an unfortunate measure, productive of no other result than the communication of the pestilence to the besieging army, by which the majority of the troops were speedily swept away. Maddened by their sufferings, the Athenians now became loud in their murmurs against Pericles, whom they accused of having brought upon them at least a portion of their calamities, by involving them in the Peloponnesian war. An assembly of the people was held, in which Pericles entered upon a justification of his conduct, and exhorted them to courage and perseverance in defence of their independence. The hardships to which they had been exposed by the war, were, he observed, only such as he had in former addresses prepared them to expect; and as for the pestilence, it was a calamity which no human prudence could either have foreseen or averted. He reminded them that they still possessed a fleet which that of no potentate on earth could equal or cope with, and that, after the present evil should have passed away, their navy might yet enable them to acquire universal empire. 'What we suffer from the gods,' continued he, 'we should bear with patience; what from our enemies, with manly firmness; and such were the maxims of our forefathers. From unshaken fortitude in misfortune has arisen the present power of this commonwealth, together with that glory which, if our empire, according to the lot of all earthly things, decay, shall still survive to all posterity.'

The eloquent harangue of Pericles diminished, but did not remove, the alarm and irritation of the Athenians, and they not only dismissed him from all his offices, but imposed upon him a heavy fine. Meanwhile domestic afflictions were combining with political anxieties and mortifications to oppress the mind of this eminent man, for the members of his family were one by one perishing by the plague. Still, however, he bore himself up with a fortitude which was witnessed with admiration by all around him; but at the funeral of the last of his children, his firmness at length gave way; and while he was, according to the custom of the country, placing a garland of flowers on the head of the corpse, he burst into loud lamentations, and shed a torrent of tears. It was not long till his mutable countrymen repented of their harshness towards him, and reinvested him with his civil and military authority. He soon after followed his children to the grave, falling, like them, a victim to the prevailing pestilence (429 B.C.). The concurrent testimony of the ancient writers assigns to Pericles the first place among Grecian statesmen for wisdom and eloquence. Though ambitious of power, he was temperate in its exercise; and it is creditable to his memory, that, in an age and country so little scrupulous in the shedding of blood, his long administration was as merciful and mild as it was vigorous and effective. When constrained to make war, the constant study of this eminent statesman was, how to overcome his enemies with the least possible destruction of life, as well on their side as on his own. It is related that, when he was lying at the point of death, and while those who surrounded him were recounting his great actions, he suddenly interrupted them by expressing his surprise that they should bestow so much praise on achievements in which he had been rivalled by many others, while they omitted to mention what he considered his highest and peculiar honour—namely, *that no act of his had ever caused any Athenian to put on mourning.*

After the death of Pericles, the war was continued, without interruption, for seven years longer, but with no very decisive advantage to either side. During this period the Athenian councils were chiefly directed by a coarse-minded and unprincipled demagogue named Cleon, who was at last killed in battle under the walls of Amphipolis, a Macedonian city, of which the possession was disputed by the Athenians and Lacedæmonians. Cleon was succeeded in the direction of public affairs by Nicias, the leader of the aristocratical party, a man of virtuous but unenterprising character, and a military officer of moderate abilities. Under his auspices a peace for fifty years, commonly known by the name of the 'Peace of Nicias,' was concluded in the tenth year of the war (421 B.C.). It was not long, however, till the contest was resumed. Offended that its allies had given up a contest undertaken for the assertion of its alleged rights, Corinth refused to be a party to the treaty of peace, and entered into a new quadruple alliance with Argos, Elis, and Mantinæa, a city of Arcadia; the ostensible object of which confederation was the defence of the Peloponnesian states against the aggressions of Athens and Sparta. This end seemed not difficult of attainment, as fresh distrusts had arisen between the two last-mentioned republics, on account of the reluctance felt and manifested by both to give up certain places which they had bound themselves by treaty mutually to surrender. The jealousies thus excited were fanned into a violent flame by the artful measures of Alcibiades, a young Athenian, who now began to rise into political power, and whose genius and character subsequently exercised a strong influence upon the affairs of Athens.

Alcibiades.

Alcibiades was the son of Clinias, an Athenian of high rank. Endowed with uncommon beauty of person, and talents of the very highest order, he was unfortunately deficient in that unbending integrity which is an essential element of every character truly great, and his violent passions sometimes impelled him to act in a manner which has brought disgrace on his memory. While still very young, Alcibiades served in the Athenian army, and became the companion and pupil of Socrates, one of the wisest and most virtuous of the Grecian sages. Having rendered some service to his country in a protracted and useless war with Lacedæmon, and being possessed of a talent for addressing the passions of the multitude, Alcibiades, as others had done before him, became the undisputed head of public affairs in Athens. But this pre-eminence was not of long continuance. An opinion arose among the people that he designed to subvert the constitution, and his fall was as quick as his promotion. Many of his friends were put to death, and he, while absent on an expedition, deprived of his authority. Being thus left without a public director of affairs, Athens, as usual, was torn by internal discords: the aristocratic faction succeeded in overthrowing the democratical government (411 B.C.), and establishing a council of 400 individuals to administer the affairs of the state, with the power of convoking an assembly of 5000 of the principal citizens for advice and assistance in any emergency. These 400 tyrants, as they were popularly called, were no sooner invested with authority, than they annihilated every remaining portion of the free institutions of Athens. They behaved with the greatest insolence and severity towards the people, and endeavoured to confirm and perpetuate their usurped power, by raising a body of mercenary troops in the islands of the Ægean, for the purpose of overawing and enslaving their fellow-citizens. The Athenian army was at this period in the island of Samos, whither it had retired after an expedition against the revolted cities of Asia Minor. When intelligence arrived of the revolution in Athens, and the tyrannical proceedings of the oligarchical faction, the soldiers indignantly refused to obey the new government, and sent an invitation to Alcibiades to return among them, and assist in re-establishing the democratical constitution. He obeyed the call; and as soon as he arrived in Samos, the troops elected him their general. He then sent a message to Athens, commanding the 400 tyrants to divest themselves immediately of their unconstitutional authority, if they wished to avoid deposition and death at his hands.

This message reached Athens at a time of the greatest confusion and alarm. The 400 tyrants had quarrelled among themselves, and were about to appeal to the

sword: the island of Eubœa, from which Athens had for sometime been principally supplied with provisions, had revolted, and the fleet which had been sent to reduce it had been destroyed by the Lacedæmonians, so that the coasts of Attica, and the port of Athens itself, were now without defence. In these distressing circumstances, the people, roused to desperation, rose upon their oppressors, overturned the government of the 400, after an existence of only a few months, and re-established their ancient institutions. Alcibiades was now recalled; but before revisiting Athens, he was desirous of performing some brilliant military exploit, which might obliterate the recollection of his late connection with the Spartans, and give his return an air of triumph. He accordingly joined the Athenian fleet, then stationed at the entrance of the Hellespont, and soon obtained several important victories over the Lacedæmonians, both by sea and land. He then returned to Athens, where he was received with transports of joy. Chaplets of flowers were showered upon his head, and amidst the most enthusiastic acclamations he proceeded to the place of assembly, where he addressed the people in a speech of such eloquence and power, that at its conclusion a crown of gold was placed upon his brow, and he was invested with the supreme command of the Athenian forces, both naval and military. His forfeited property was restored, and the priests were directed to revoke the curses which had formerly been pronounced upon him.

This popularity of Alcibiades was not of long continuance. Many of the dependencies of Athens being in a state of insurrection, he assumed the command of an armament intended for their reduction. But circumstances arose which obliged him to leave the fleet for a short time in charge of one of his officers, named Antiochus, who, in despite of express orders to the contrary, gave battle to the Lacedæmonians during the absence of the commander-in-chief, and was defeated. When intelligence of this action reached Athens, a violent clamour was raised against Alcibiades: he was accused of having neglected his duty, and received a second dismissal from all his offices. On hearing of this, he quitted the fleet, and retiring to a fortress he had built in the Chersonesus of Thrace, he collected around him a band of military adventurers, with whose assistance he carried on a predatory warfare against the neighbouring Thracian tribes.

Alcibiades did not long survive his second disgrace with his countrymen. Finding his Thracian residence insecure, on account of the increasing power of his Lacedæmonian enemies, he crossed the Hellespont, and settled in Bithynia, a country on the Asiatic side of the Propontis. Being there attacked and plundered by the Thracians, he proceeded into Phrygia, and placed himself under the protection of Pharnabasus, the Persian satrap of that province. But even thither the unfortunate chief was followed by the unrelenting hatred of the Lacedæmonians, by whose directions he was privately and foully assassinated. Thus perished, about the fortieth year of his age (403 B.C.), one of the ablest men that Greece ever produced. Distinguished alike as a warrior, an orator, and a statesman, and in his nature noble and generous, Alcibiades would have been truly worthy of our admiration if he had possessed probity; but his want of principle, and his unruly passions, led him to commit many grievous errors, which contributed not a little to produce or aggravate those calamities which latterly overtook him.

DECLINE OF ATHENIAN INDEPENDENCE.

With Alcibiades perished the last of the great men who possessed the power to sway the wild democracy, or, properly speaking, the mob of Athens. From the period of his death till the subjugation of the country, the Athenian people were at the mercy of contending factions, and without a single settled principle of government. During this brief period of their history, in which a kind of popular democracy had attained the command of affairs, happened the trial and condemnation of Socrates, an eminent teacher of morals, and a man guiltless of every offence but that of disgracing, by his illustrious merit, the vices and follies of his contemporaries. On the false charge of corrupting the morals of the pupils who listened to his admirable expositions, and of denying the religion of his country, he was, to the eternal disgrace of the Athenians, compelled to die by drinking poison, a fate which he submitted to with a magnanimity which has rendered his name for ever celebrated. This odious transaction occurred in the year 400 B.C.

After the death of this great man, the political independence of Athens drew to its termination—a circumstance which cannot excite the least surprise, when we reflect on the turbulence of its citizens, their persecution of virtue and talent, and their unhappy distrust of any settled form of government. Their ruin was finally accomplished by their uncontrollable thirst for war, and can create no emotions of pity or regret in the reader of their distracted history. The Lacedæmonians, under the command of an able officer named Lysander, attacked and totally destroyed the Athenian fleet. By this means having obtained the undisputed command of the sea, Lysander easily reduced those cities on the coasts of Thrace and Asia Minor, and those islands of the Ægean, which still acknowledged the supremacy of Athens. Having thus stripped that once lordly state of all its dependencies, he proceeded to blockade the city of Athens itself. The Athenians made a heroic defence; but after a lengthened siege, during which they suffered all the horrors of famine, they were obliged to surrender on such conditions as their enemies thought fit to impose (404 B.C.). The Spartans demanded that the fortifications of Piræus, and the long walls which connected it with the city, should be demolished; that the Athenians should relinquish all pretensions to authority over their former tributaries, recall the exiled partisans of the 400 tyrants, acknowledge the supremacy of Sparta, and follow its commanders in time of war; and finally, that they should adopt such a political constitution as should meet the approbation of the Lacedæmonians.

Thus sank the power of Athens, which had so long been the leading state of Greece, and thus terminated the Peloponnesian war, in which the Grecian communities had been so long engaged, to little other purpose than to waste the strength, and exhaust the resources, of their common country.

Condition of Athens.

During the age preceding its fall, Athens, as already mentioned, had been greatly beautified and enlarged by Pericles. At the same time, the comparative simplicity of manners which formerly prevailed was exchanged for luxurious habits. This alteration has been thus described by Gillies in his 'History of Ancient Greece:'—'In the course of a few years, the success of Aristides, Cimon, and Pericles, had tripled the revenues, and increased in a far greater proportion the dominions of the republic. The Athenian galleys commanded the eastern coasts of the Mediterranean; their merchantmen had engrossed the traffic of the adjacent countries; the magazines of Athens abounded with wood, metal, ebony, ivory, and all the materials of the useful as well as of the agreeable arts; they imported the luxuries of Italy, Sicily, Cyprus, Lydia, Pontus, and Peloponnesus; experience had improved their skill in working the silver mines of Mount Laurium; they had lately opened the valuable marble veins in Mount Pentelicus; the honey of Hymettus became important in domestic use and foreign traffic; the culture of their olives (oil being long their staple commodity, and the only production of Attica which Solon allowed them to export) must have improved with the general improvement of the country in arts and agriculture, especially under the active administration of Pericles, who liberally let loose the public treasure to encourage every species of industry.

But if that minister promoted the love of action, he found it necessary at least to comply with, if not to ex-

cite the extreme passion for pleasure which then began to distinguish his countrymen. The people of Athens, successful in every enterprise against their foreign as well as domestic enemies, seemed entitled to reap the fruits of their dangers and victories. For the space of at least twelve years preceding the war of Peloponnesus, their city afforded a perpetual scene of triumph and festivity. Dramatic entertainments, to which they were passionately addicted, were no longer performed in slight, unadorned edifices, but in stone or marble theatres, erected at great expense, and embellished with the most precious productions of nature and of art. The treasury was opened, not only to supply the decorations of this favourite amusement, but to enable the poorer citizens to enjoy it, without incurring any private expense; and thus, at the cost of the state, or rather of its tributary allies and colonies, to feast and delight their ears and fancy with the combined charms of music and poetry. The pleasure of the eye was peculiarly consulted and gratified in the architecture of theatres and other ornamental buildings; for as Themistocles had strengthened, Pericles adorned, his native city; and unless the concurring testimony of antiquity was illustrated in the Parthenon, or Temple of Minerva, and other existing remains worthy to be immortal, it would be difficult to believe that in the space of a few years there could have been created those numerous, yet inestimable wonders of art, those temples, theatres, statues, altars, baths, gymnasia, and porticoes, which, in the language of ancient panegyric, rendered Athens the eye and light of Greece.

Pericles was blamed for thus decking one favourite city, like a vain voluptuous harlot, at the expense of plundered provinces; but it would have been fortunate for the Athenians if their extorted wealth had not been employed in more perishing, as well as more criminal, luxury. The pomp of religious solemnities, which were twice as numerous and costly in Athens as in any other city of Greece—the extravagance of entertainments and banquets, which on such occasions always followed the sacrifices—the increase of private luxury, which naturally accompanied this public profusion—exhausted the resources, without augmenting the glory, of the republic. Instead of the bread, herbs, and simple fare recommended by the laws of Solon, the Athenians, soon after the eightieth Olympiad, availed themselves of their extensive commerce to import the delicacies of distant countries, which were prepared with all the refinements of cookery. The wines of Cyprus were cooled with snow in summer; in winter, the most delightful flowers adorned the tables and persons of the wealthy Athenians. Nor was it sufficient to be crowned with roses, unless they were likewise anointed with the most precious perfumes. Parasites, dancers, and buffoons, were a usual appendage of every entertainment. Among the weaker sex, the passion for delicate birds, distinguished by their voice or plumage, was carried to such excess, as merited the name of madness. The bodies of such youths as were not peculiarly addicted to hunting and horses, which began to be a prevailing taste, were corrupted by a lewd style of living; while their minds were still more polluted by the licentious philosophy of the sophists. It is unnecessary to crowd the picture, since it may be observed, in one word, that the vices and extravagances which are supposed to characterise the declining ages of Greece and Rome, took root in Athens during the administration of Pericles, the most splendid and most prosperous in the Grecian annals.'

During this period flourished Æschylus and Sophocles, Euripides and Aristophanes, dramatists; Pindar, a lyrical poet; Herodotus and Thucydides, historians; Xenophanes, Heraclitus, Empedocles, Anaxagoras, and Socrates, philosophers (reasoners upon the nature of the human mind, and upon man's immortal destiny). In this period also, under the administration of Pericles (from 458 to 429 B.C.), sculpture and architecture attained their perfection. It was then that Phidias executed those splendid works, statues of the gods and goddesses, which excited the admiration of the world, and which succeeding artists have in vain endeavoured to rival. While Athens had extended its power over a great part of the coasts of the Ægean Sea, and increased its trade and commerce by every available means, it had also become a city of palaces and temples, whose ruins continue to be the admiration of ages for their grandeur and beauty. It is understood that the Greeks had acquired their knowledge of architecture from the Egyptians; but they greatly excelled them in the elegance of their designs, and are in a great measure entitled to the character of inventors in the art. The beauty of the Corinthian pillar, for example, has never been excelled either in ancient or modern times. (See ARCHITECTURE, in Vol. I.)

After the surrender of Athens to the Spartans (404 B.C.), the democratical constitution was abolished, and the government was intrusted to thirty persons, whose rapacious, oppressive, and bloody administration ere long procured them the title of the Thirty Tyrants. The ascendancy of these intruders was not, however, of long duration. Conon, assisted privately by the Persians, who were desirous of humiliating the Spartans, expelled the enemy, and re-established the independence of his country. About seventy years later, a new source of agitation throughout Greece was caused by the warlike projects of Alexander, king of Macedon, usually styled

Alexander the Great.

This intrepid and ambitious soldier was the son of Philip, king of Macedon, a small territory adjacent to the Grecian states, from which it had originally received a knowledge of arts and learning. Alexander was born in the year 356 B.C., and by his father was committed to the charge of the philosopher Aristotle to be educated; a duty which was faithfully fulfilled. By the assassination of Philip, Alexander was called to the throne of Macedon while yet only twenty years of age, and immediately had an opportunity of displaying his great warlike abilities in conducting an expedition into Greece, which was attended with signal success, and procured for him the honour of succeeding his father as commander-in-chief of the Grecian states. He now carried out a design which had been formed by Philip, to subdue Persia and other countries in Asia. In the spring of 334 B.C., he crossed over to the Asiatic coast, with an army of 30,000 foot and 5000 horse, thus commencing the most important military enterprise which is narrated in the pages of ancient history. Alexander marched through Asia Minor, and in successive encounters completely conquered the armies of Persia; but the whole history of his progress is but an account of splendid victories. During a space of about seven or eight years, he conquered Persia, Assyria, Egypt, Babylonia, and, in fact, became master of nearly all the half-civilised countries in Asia and Africa. It does not appear that Alexander had any motive for this wide-spread overthrow of ancient and remote sovereignties, excepting that of simple ambition, or desire of conquest, with perhaps the indefinite idea of improving the social condition of the countries which he overran. From various circumstances in his career, it is apparent that he never contemplated the acquisition of wealth or of praise, except such as could be shared with his soldiers, for whom he displayed a most paternal affection. His character in this respect shines forth in a remarkable speech which he delivered to his army after these great conquests, and when some mutinous murmurs had broken forth in his camp. Mounting the tribunal, he spoke as follows:—'It is not my wish, Macedonians, to change your resolution. Return home without hindrance from me. But before leaving the camp, first learn to know your king and yourselves. My father Philip (for with him it is ever fit to begin) found you, at his arrival in Macedon, miserable and hopeless fugitives; covered with skins of sheep; feeding among the mountains some wretched herds, which you had neither strength nor courage to defend against the Thracians, Illyrians, and Triballi.

Having repelled the ravagers of your country, he brought you from the mountains to the plain, and taught you to confide, not in your fastnesses, but in your valour. By his wisdom and discipline, he trained you to arts and civility, enriched you with mines of gold, instructed you in navigation and commerce, and rendered you a terror to those nations at whose names you used to tremble. Need I mention his conquests in Upper Thrace, or those, still more valuable, in the maritime provinces of that country? Having opened the gates of Greece, he chastised the Phœnicians, reduced the Thessalians, and while I shared the command, defeated and humbled the Athenians and Thebans, eternal foes to Macedon, to whom you had been successively tributaries, subjects, and slaves. But my father rendered you their masters; and having entered the Peloponnesus, and regulated at discretion the affairs of that peninsula, he was appointed, by universal consent, general of combined Greece; an appointment not more honourable to himself than glorious for his country. At my accession to the throne, I found a debt of 500 talents, and scarcely sixty in the treasury. I contracted a fresh debt of 800; and conducting you from Macedon, whose boundaries seemed unworthy to confine you, safely crossed the Hellespont, though the Persians then commanded the sea. By one victory we gained Ionia, Æolia, both Phrygias, and Lydia. By our courage and activity, the provinces of Cilicia and Syria, the strength of Palestine, the antiquity of Egypt, and the renown of Persia, were added to your empire. Yours now are Bactria and Aria, the productions of India, the fertility of Assyria, the wealth of Susa, and the wonders of Babylon. You are generals, princes, satraps. What have I reserved for myself but this purple and diadem, which mark my pre-eminence in toil and dangers? Where are my private treasures? Or why should I collect them? Are my pleasures expensive? You know that I fare worse than any of yourselves; and have in nothing spared my person. Let him who dares compare with me. Let him bare his breast, and I will bare mine. My body, the fore part of my body, is covered with honourable wounds from every sort of weapon. I often watch, that you may repose safely; and to testify my unremitting attention to your happiness, had determined to send home the aged and infirm among you, loaded with wealth and honour. But since you are all desirous to leave me, go! Report to your countrymen that, unmindful of the signal bounty of your king, you intrusted him to the vanquished barbarians. The report, doubtless, will bespeak your gratitude and piety.'

This impassioned and touching oration deeply affected the discontented soldiers, and all gladly returned to their allegiance. Shortly after this, the extraordinary career of Alexander was suddenly cut short by death. At Babylon, while engaged in extensive plans for the future, he became sick, and died in a few days, 323 B.C. Such was the end of this conqueror, in his thirty-second year, after a reign of twelve years and eight months. He left behind him an immense empire, which, possessing no consolidated power, and only loosely united by conquest, became the scene of continual wars. The generals of the Macedonian army respectively seized upon different portions of the empire, each trusting in his sword for an independent establishment. The greedy struggle for power finally terminated in confirming Ptolemy in the possession of Egypt; Seleucus in Upper Asia; Cassander in Macedon and Greece; while several of the provinces in Lower Asia fell to the share of Lysimachus.

CONCLUDING PERIOD OF GREEK HISTORY.

At the death of Alexander, the Athenians considered it a fit opportunity to emancipate themselves from the ascendancy of Macedon; but without success. Demosthenes, one of the most eminent patriots and orators of Athens, on this occasion, to avoid being assassinated by order of Antipater, the Macedonian viceroy, killed himself by swallowing poison; and his compatriot Phocion, was shortly afterwards put to death by his own countrymen, the Athenians, in a mad outbreak of popular fury. Greece cannot be said to have produced one great man after Phocion; and this deficiency of wise and able leaders was doubtless one chief cause of the insignificance into which the various states, great and small, sunk after this epoch.

The ancient history of Greece, as an independent country, now draws to a close. Achaia, hitherto a small, unimportant state, having begun to make some pretensions to political consequence, excited the enmity of Sparta, and was compelled to seek the protection of Philip, the ruling prince of Macedon. Philip took the field against the Spartans, and their allies the Ætolians, and was in a fair way of subjecting all Greece by arms and influence, when he ventured on the fatal step of commencing hostilities against the Romans. This measure consummated the ruin of Greece, as well as that of Macedon. The Romans warred with Philip till the end of his life (175 B.C.), and continued the contest with his son Perseus, whom they utterly defeated, and with whom ended the line of the kings of Macedon. In a few years the once illustrious and free republics of Greece were converted into a Roman province, under the name of Achaia (146 B.C.).

Thus terminates the fourth and last period of Greek history, during which there flourished several eminent writers and philosophers, among whom may be numbered Theocritus, a pastoral poet; Xenophon, Polybius, Diodorus Siculus, Dionysius Halicarnassus, Plutarch, and Herodian, historians; Demosthenes, an orator; and Plato, Aristotle, Zeno, and Epicurus, philosophers; also Zeuxis, Timanthes, Pamphilus, Nicias, Apelles, and Eupompus, painters; and Praxiteles, Polycletus, Camachus, Naucides, and Lysippus, sculptors.

In the condition of a humble dependency of Rome, and therefore following the fate of that empire, Greece remained for upwards of four succeeding centuries; but although of little political importance, it still retained its pre-eminence in learning. Enslaved as the land was, it continued to be the great school of the time. As Greece had formerly sent its knowledge and arts over the East by the arms of one of her own kings, she now diffused them over the western world under the protection of Rome. Athens, which was the emporium of Grecian learning and elegance, became the resort of all who were ambitious of excelling either in knowledge or the arts; statesmen went thither to improve themselves in eloquence; philosophers to learn the tenets of the sages of Greece; and artists to study models of excellence in building, statuary, or painting; natives of Greece were also found in all parts of the world, gaining an honourable subsistence by the superior knowledge of their country. That country in the meantime was less disturbed by intestine feuds than formerly, but was not exempt from the usual fate of conquests, being subject to the continual extortions of governors and lieutenants, who made the conquered provinces the means of repairing fortunes which had been broken by flattering the caprices of the populace at home.

The period of the independence of Greece, during which all those great deeds were performed which have attracted the attention of the world, may be reckoned from the era of the first Persian war to the conquest of Macedon, the last independent Greek state, by the Romans. This period, as we have seen, embraced little more than 300 years. It is not, therefore, from the duration of the independent political power of the Grecian states that their celebrity arises. Even the patriotism of their soldiers, and the devoted heroism of Thermopylæ and Marathon, have been emulated elsewhere without attracting much regard; and we must therefore conclude that it is chiefly from the superiority of its poets, philosophers, historians, and artists, that the importance of the country in the eyes of modern men arises. The political squabbles of the Athenians are forgotten; but the moral and intellectual researches of their philosophers, and the elegant remains of their artists, possess an undying fame.

HISTORY OF ROME.

About the year 754 B.C., at that point of Central Italy, nearly fifteen miles from the Tuscan Sea, where the Anio joins the Tiber, there stood on a height, called the Palatine Mount, a little village named *Roma*, the centre of a small township, consisting probably of 5000 or 6000 inhabitants, all of them husbandmen and shepherds. This Rome was one of the border townships of Latium, a territory of fertile and undulating table-land extending from the Tiber to the Liris, and from the sea-coast to the hills of the interior. The whole surface of Latium was under diligent cultivation, and was covered with villages similar to Rome, which together constituted what was called the Latin nation.

EARLY INHABITANTS OF ITALY—THE LATINS—PRIMITIVE ROMAN SOCIETY.

The population of Latium consisted of a mixture of Oscans, who are supposed to have been the aboriginal inhabitants of this as of other parts of Italy, with Pelasgians, an invading race, who, obeying the tendency of the human species in early times to move westward, had poured themselves out of Asia into the south-eastern parts of Europe, and after filling Greece, had sought settlements on the Italian coasts. The language of the Latins, accordingly, was a compound of Pelasgic (which was also the radical element of the Greek) with Oscan, the aboriginal tongue of the district, and which still lingered among the mountaineers of the Apennines. It was a tradition among the Latins themselves, that their nation had been founded, or at least re-organised, by Æneas, one of the mythic heroes of the 'Iliad,' who, on the destruction of his native city Troy, had sought refuge in Italy. The progeny of this hero, it was believed, still reigned over Alba Longa, the chief of all the Latin cities, and the capital of the nation. The general affairs of the community were administered by a confederacy of thirty of the principal townships. As regarded its own special government, however, each township, powerful enough to resist encroachment, was independent. The government in all these petty states or townships, Rome among the rest, was of the primitive heroic model: a king or chieftain, of high lineage, presided over the community, governing by divine right, but in accordance with certain time-hallowed customs, one of which was, that of assembling the people for consultation on great emergencies. Social order within the limits of each little state was further secured by the natural arrangement into families—the authority of the head of a family in primitive society amounting even to the power of life and death over all members of that family. Besides the division into families, however, there existed in the ancient states of Italy and Greece another natural division, of a kind of which we have no exact type in modern times—that into *Gentes*, or, as it may with some license be translated, *Houses*. The gens, or house, was an association of families—ten, twelve, or twenty families to a gens: the connecting ties being descent from a common ancestor, or at least belief in such a descent; the obligation at stated times to perform certain sacrifices and religious rites in common; and certain legal advantages which the association procured for its members—such as the right of the gens to succeed to the property of any of its members who might die intestate, and without direct heirs. Each gens had its head or chief; and the heads or chiefs of the gentes in any community constituted a sort of natural senate, or assembly of aged and experienced persons, whom the king could consult as an intermediate body between himself and the entire *Populus*, or People. Thus in Rome, the constitution of which, about the year B.C. 754, seems to have attained a pretty fixed shape, the heads of the hundred gentes into which, according to the traditional system of round numbers, the little community was divided, constituted a senate or assembly of elders, acting as advisers of the king, and generally as the chief men of the state. Honest gray-haired old farmers we may suppose these primitive Roman senators to have been, with firm faith, nevertheless, that in their veins flowed the blood of heroes and demigods of the olden time, the duty of remembering whom formed part of their household religion. The gens of the Fabii, for instance, traced themselves up to an imaginary hero, named Fabius; the gens of the Nautii to an imaginary Nautius, strong-limbed, and powerful in battle.

Rome, we have said, was a frontier township of Latium. It was situated precisely at that point where the territories of Latium adjoined those of two other nations—of the Sabines, a hardy Oscan race of shepherds inhabiting the angular district between the Anio and the Tiber; and of the Etruscans, a remarkable people, of unknown but probably Oriental origin, who had arrived in the north of Italy some centuries later than the Pelasgians, and conquering all before them, whether Pelasgians or Oscans, by the force of superior civilisation, had settled chiefly in the region between the Arnus and the Tiber, corresponding to modern Tuscany. Between these three races—Oscans, Pelasgians, and Etruscans—either apart, or in various combinations, all Italy, with the exception perhaps of some portions near the Alps, was divided: the Oscans predominating in the interior; the Pelasgians, or rather Pelasgo-Oscans, along the coasts, as in Latium; and the Etruscans in the parts above-mentioned. While the Italian peninsula was thus occupied but by three great races or main stocks; the political divisions or nations into which it was parcelled out were so numerous, however, that it would be scarcely possible to give a complete list of them.

Situated so near to the Sabine and Etruscan frontiers, an intercourse, sometimes friendly and sometimes hostile, must naturally have been carried on between the Latins of Rome and the Sabines and Etruscans, with whom they were in contact. A chain of events, which history cannot now trace, but which is indicated in a poetic manner by a number of early Roman legends, led to the incorporation of Rome with two neigh-

bouring towns—one of them a small dependency of the Etruscans, situated on the Cœlian Hill, and probably named Lucerum; another a Sabine village on the Quirinal Hill, called Quirium. The Etruscans, or Etrusco-Latins as they seem rather to have been, of Lucerum were received on a subordinate footing; the Sabines of Quirium on one of equality; but the joint city continued to bear its old name of Roma. The population of this new Rome consisted, therefore, of three tribes—the ancient Romans, who called themselves *Ramnes;* the Sabines of Quirium, who called themselves *Tities;* and the Etrusco-Latins of Lucerum, who were named *Luceres.*

ORIGINAL ROMAN CONSTITUTION—EARLY HISTORY UNDER THE KINGS—ORIGIN OF THE PLEBEIANS.

With the enlargement of the population of Rome by the addition of these new masses of citizens, a change of the constitution became of course necessary. The following seems to have been the form ultimately assumed:—Governed by a common sovereign, eligible by the whole community from one of the superior tribes—the Ramnes and the Tities—the three tribes intrusted the conduct of their affairs to a senate composed of 200 members, 100 of whom represented the gentes of the Ramnes, and 100 the gentes of the Tities. The Luceres, as an inferior tribe, were not represented in the senate; and their political influence was limited to the right to vote with the other two tribes in the general assemblies of the whole people. In these general assemblies, or *Comitia*, as they were called, the people voted; not individually, nor in families, nor in gentes, but in divisions called *Curiæ* or *Curies;* the *Curia* being the tenth part of a tribe, and including, according to the ancient system of round numbers, ten gentes. Thus the entire Populus Romanus, or Roman people, of this primitive time consisted of thirty curies—ten curies of Ramnes, ten of Tities, and ten of Luceres: the ten curies of each tribe corresponding to 100 gentes, and the thirty curies together making up 300 gentes. As the Luceres were an inferior tribe, their gentes were called *Gentes Minores*, or Lesser Houses; while those of the Ramnes and Tities were called *Gentes Majores*, or Greater Houses. The assembly of the whole people was called the *Comitia Curiata*, or Meeting of Curies. After a measure had been matured by the king and senate, it was submitted to the whole people in their curies, who might accept or reject, but could not alter, what was thus proposed to them. An appeal was also open to the curies against any sentence of the king, or of the judges nominated by him in his capacity of supreme justiciary. The king, moreover, was the high priest of the nation in peace, as well as the commander-in-chief during war. The 300 gentes furnished each a horseman, so as to constitute a body of cavalry; the mass of the people forming the infantry. The right of assembling the senate lay with the king, who usually convened it three times a month.

Such was ancient Rome, as it appears to the historic eye endeavouring to penetrate the mists of the past, where at first all seems vague and wavering. The inquirer to whom we owe the power to conceive the condition of ancient Rome, so far as that depended on political institutions, was the celebrated German historian Niebuhr. Not so, however, did the Romans conceive their own early history. In all ancient communities, it was a habit of the popular imagination, nay, it was part of the popular religion, to trace the fortunes of the community to some divine or semi-divine founder; whose exploits, as well as those of his heroic successors, formed the subject of numerous sacred legends and ballads. Now, it was part of the Roman faith that their city had been founded at a point of time corresponding with B.C. 754, by twin brothers of miraculous birth, called Romulus and Remus, whose father was the war god Mars, and their mother a vestal virgin of the line of the Alban kings, the progeny of the great Æneas. Romulus, according to this legend, surviving his brother Remus, became the king of the village of shepherds which he had founded on the Palatine; and it was in his reign that those events took place which terminated in the establishment of the triple community of the Ramnes, Tities, and Luceres. Setting out with Romulus, the Romans traced the history of their state through a series of legends relating to six kings, his successors, whose characters, and the lengths of their reigns, are all duly determined. Of this traditionary succession of seven kings, extending over a period of 245 years (B. C. 754–509), history can recognise with certainty the existence of only the two or three latest. It is possible, however, to elicit out of the legends a glimmering of the actual history of the Roman state during these imaginary reigns.

Possessed, as all our information respecting the Romans in later times justifies us in supposing, of an unusual degree of that warlike instinct which was so rampant among the early tenants of our globe, the shepherd farmers of Rome were incessantly engaged in raids on their Latin, Etruscan, and Sabine neighbours. Strong-bodied, valiant, and persevering, as we also know them to have been, they were, on the whole, successful in these raids; and the consequence was, a gradual extension of their territory, particularly on the Latin side, by the conquest of those who were weaker than themselves. After each conquest, their custom was to deprive the conquered community of a part of their lands, and also of their political independence, annexing them as subjects to the Populus Romanus. The consequence was a gradual accumulation round the original Populus, with its 300 Houses, of a subject-population, free-born, and possessing property, but without political influence. This subject-population, the origin of which is dated by the legends from the reign of Ancus Martius, the fourth king from Romulus, received the name of the *Plebs*, a word which we translate 'common people,' but which it would be more correct, in reference to these very ancient times, to translate 'conquered people.' Besides the plebs, the Roman community received another ingredient in the persons called *Clients;* strangers, that is, most of them professing mechanical occupations, who, arriving in Rome, and not belonging to a gens, were obliged, in order to secure themselves against molestation, to attach themselves to some powerful citizen willing to protect them, and called by them *Patronus*, or Patron. About six centuries before Christ, therefore, the population of the growing township of Roma may be considered as having consisted of four classes—1*st*, The populus, or patricians, a governing class, consisting of a limited number of powerful families, holding themselves aloof from the rest of the community, not intermarrying with them, and gradually diminishing in consequence; 2*d*, The plebs, or plebeians, a large and continually-increasing subject-population, of the same mixed Etrusco-Sabine-Latin blood as the populus, but domineered over by them by right of conquest; 3*d*, The clients, a considerable class, chiefly occupied in handicraft professions in the town, while the populus and the plebs confined themselves to the more honourable occupation, as it was then esteemed, of agriculture; and 4*th*, The slaves, or *servi*, whether belonging to patricians, plebeians, or clients—a class who were valued along with the cattle.

The increasing numbers of the plebs, the result of fresh wars, and the value of their services to the community, entitled them to possess, and emboldened them to claim, some political consideration. Accordingly, in the reign of Tarquinius Priscus, the fifth of the legendary kings, and in whose reputed Etruscan lineage historians fancy that they can discern a time when Etruscan influence, if not Etruscan arms, reigned paramount in Rome, a modification of the original constitution took place. A number of the richest plebeian families were drafted into the populus, to supply the blanks caused by the dying out of many of the ancient gentes of the Ramnes, Tities, and Luceres; and at the same time the number of senators was increased to 300, by the admission of the Luceres to the same rights as

the other two tribes. Even this modification was insufficient; and in order to do justice to the claims of the plebs, Servius Tullius, the successor of Tarquinius, and who is gratefully celebrated in Roman history as 'the King of the Commons,' proposed and effected an entire renovation of the political system of the state. His first reform consisted in giving the plebs a regular internal organisation for its own purposes, by dividing it into thirty tribes or parishes—four for the town, and twenty-six for the country—each provided with an officer or tribe-convener called the Tribune, as well as with a detailed machinery of local government; and all permitted to assemble in a general meeting called the *Comitia Tributa*, to discuss matters purely affecting the plebs. But this was not all. To admit the plebs to a share in the general legislative power of the community, he instituted a third legislative body, called the *Comitia Centuriata*, in addition to the two—the senate and the comitia curiata—already existing. The comitia centuriata was an assembly of the whole free population of the Roman territory—patricians, plebeians, and clients—arranged, according to the amount of their taxable property, in five classes, which again were subdivided into 195 bodies, called *Centuries*, each century possessing a vote, but the centuries of the rich being much smaller than those of the poor, so as to secure a preponderance to wealth. The powers of the comitia centuriata were similar to those of the comitia curiata under the former system. They had the right to elect supreme magistrates, and to accept or reject a measure referred to them by the king and senate. The comitia curiata, however, still continued to be held; and a measure, even after it had passed the comitia centuriata, had still to be approved by the curies ere it could become a law. Notwithstanding this restriction, the constitution of Servius Tullius was a great concession to the popular spirit, as it virtually admitted every free individual within the Roman territory to a share in the government.

An attempt on the part of Tarquinius Superbus, the successor of Servius Tullius, to undo the reforms of his predecessor, and to establish what the ancients called a tyranny, or a government of individual will, led to the expulsion of him and his family, and to the abolition of the kingly form of government at Rome, B.C. 509, or in the year of the city 245. Instead of a king, two annual magistrates called Consuls were appointed, in whom were vested all the kingly functions, with the exception of the pontifical, for which special functionaries were created. Otherwise, the Servian constitution remained in full operation.

THE COMMONWEALTH TO THE GAULISH INVASION—STRUGGLE BETWEEN THE PATRICIANS AND PLEBEIANS.

After the expulsion of the kings, the little republic had to struggle through many difficulties arising from the attacks of the neighbouring nations, incited thereto by the Tarquinii. Ten of the twenty-six rural parishes were torn away in the contest—a loss equivalent to a full third part of the Roman territory. It would have required a prophetic eye to foresee that, of all the states into which Italy was then divided, this little struggling republic was to obtain the pre-eminence. One would have been disposed to promise the supremacy of the peninsula rather to the cultured and large-brained Etruscans, already masters of the north of Italy; to the hardy and valiant Samnites, who were fast overspreading the southern interior; or, most probably of all, to the Greeks, who, after adding Sicily to the empire of their gifted race, were rapidly establishing colonies on the southern coasts of the peninsula. Nay, clustered round the Roman territories there were various petty states, any one of which might have appeared a match for Rome—the Latins, the Æquians, the Volscians, the Hernicans, the Sabines, and the Etruscans of Veii on the right bank of the Tiber. Who could have predicted that, bursting this cincture of nations, the men of the Tiber would overspread the peninsula, and, by the leavening influence of their character and institutions, throw first it, and then all Europe, into fermentation!

It required a period of 119 years (B.C. 509–390) to enable the Romans to burst the chain of petty nations—Latins, Volscians, Vejentes, &c.—which girdled in their strength. This was a period of almost incessant warfare; the last glorious act of which was the siege and capture of Veii by the hero Camillus, B.C. 395, or in the year of the city 359. By this capture part of Etruria was added to the Roman dominions, and the influence of the state considerably extended on all sides. This conquest, as well as the career of victory against Æquians, Volscians, &c. which had preceded it, was greatly facilitated by a confederacy, offensive and defensive, which had subsisted between the Romans and the adjacent nations of the Latins and the Hernicans from the year of the city 268, the twenty-third year after the expulsion of the kings, when it had been established by the instrumentality of an able patrician named Spurius Cassius, who was three times, in cases of difficulty, elected to the consulship. This confederacy with two powerful nations had insured the stability of the infant republic against all assaults.

The second consulship of Spurius Cassius (year of Rome 261, or B.C. 493) had also been remarkable as the epoch of a formidable civic tumult—the first of that long series of struggles between the patricians and the plebeians which constitutes the most interesting portion of the annals of the early Commonwealth. Not long after the expulsion of the kings, the patrician gentes had begun to show a disposition to tamper with the Servian constitution, or at least to prevent the plebs from obtaining more power than they already possessed. The principal instrument by which they were able to cripple the energies of the plebs was the operation of the law of debt. In primitive Rome, as in other ancient states, an insolvent debtor was liable to be seized by his creditor, and kept in chains, or made to work as his slave. Now, such had been the distress of the first years of the republic, that multitudes of the plebeians, deprived, by the casualties of war, of their little properties, had been obliged, in order to preserve the lives of their families, to become debtors to the patricians, the exclusive proprietors of the state lands. Hundreds had, in consequence, fallen into a condition of slavery; and many more, fearing to offend their patrician creditors by opposing their designs, had become mere ciphers in the comitia centuriata. In short, the plebs, as a body, was disintegrated and disheartened. Some instances of oppression, more flagrant than ordinary, led to an outbreak, and a clamour for the abolition of all existing debts; and to enforce their demands, the plebeians adopted a method of agitation which seems singular enough to our modern conceptions: they, or at least such of them as were in arms for military service, retired in a mass from the city at a time when it was threatened with invasion, and encamped on a hill near, declaring they would starve sooner than live in such a place as Rome was. The government was thus reduced to a dead lock; Spurius Cassius was chosen consul by the patricians; and by his instrumentality an arrangement was come to, by which the demands of the commons were conceded, existing debts abolished, a treaty of mutual obligation for the future agreed to between the populus and the plebs as between two independent communities, and a new office instituted, under the title of the *Tribuneship of the Common People*, for the express purpose of protecting the interests of the plebs. The commons then returned to the city; two tribunes of the people were appointed; and their number was subsequently increased first to five, and afterwards to ten. No one could have foreseen how important this office would become.

Not content with alleviating the temporary distresses of the plebeians, Spurius Cassius wished permanently to ameliorate their condition; and accordingly, in his third consulship, in the year of the city 268, or B.C. 486, he boldly proposed and carried what was called an *Agrarian Law*. It is absolutely necessary that the

reader of Roman history should understand this term. According to the early Roman constitution, the lands acquired in war became the property of the whole populus, or body of patricians, in common. Portions of the conquered lands might be purchased from the state by rich persons; and in such cases the purchaser, whether patrician or plebeian, became absolute owner. Usually, however, the lands were not sold, but were annexed to the unallotted property already belonging to the populus. With regard to this state land, a very curious system prevailed. Any patrician (but none else) was allowed to occupy and cultivate as much of it as he chose, on condition of paying to the state a tithe of the annual produce if it were arable land, and a fifth if it were laid out in oliveyards or vineyards. The land thus occupied did not, by right of possession, become the property of the individual: he was liable to be turned out of it at the pleasure of the state—his landlord; and it was entirely at his own risk that he laid out capital in improving it. As, however, it rarely happened that an individual was ejected from land which he had thus occupied, large tracts of the state land were speedily occupied by enterprising patricians. Such being the plan of distribution, it is evident that in the state lands, occupied and unoccupied, the government possessed a constant fund upon which they could draw in cases of emergency. By selling portions of it, they could raise money; and by assigning portions of it to indigent families, they could permanently provide for them. Several times, it appears, this had been done in the case of indigent plebeian families; and the agrarian law of Spurius Cassius was simply a proposal that—a large accession to the state lands having just taken place—the government should seize the opportunity to provide for the distressed plebeians, by apportioning them small portions of these state lands. To the plebeians this proposal was exceedingly agreeable; not so, however, to the patricians, who possessed the right of occupying and farming as much of the public territory as they chose, but who lost that right from the moment that the land was apportioned by the state. The patricians, accordingly, resisted the proposal with all their might; and Spurius Cassius having carried it notwithstanding, they caused him to be impeached and put to death as soon as his consulship had expired.

After this event, the patricians renewed their efforts to suppress the plebs, proceeding so far as to transfer the right of electing the consuls from the centuries to the purely patrician body of the curies. The plebeians, however, behaved resolutely, asserting their rights through their tribunes, and by clamours in the comitia tributa, where none but plebeians had a right to take a part. In the year of the city 271, or B.C. 483, they regained the power of choosing one of the consuls; and in the year 283, or B.C. 471, they wrung from the patricians the right of electing their tribunes in their own comitia tributa, instead of the centuries, at the same time obtaining the right to discuss in the comitia tributa affairs affecting the whole Commonwealth. Other concessions followed; and at length, in the year 292, or B.C. 462, a tribune named Caius Terentilius Harsa was so bold as to propose a complete revision of the constitution in all its parts. It was not desirable, he said, that the old distinction between populus and plebs, which had originated in war, should be longer kept up; let, therefore, a revision of the whole body of the laws be undertaken, with a view to put the plebeians on a legal equality with the patricians, and let some more limited form of supreme magistracy be substituted for the consulship. After a protracted opposition, this proposal resulted, in the year 303, or B.C. 452, in the appointment of the famous *First Decemvirate;* a board of ten patricians, who were to revise the entire body of the laws, as well as the political machinery of the state, superseding in the meantime all other authority. The digest of Roman law prepared by these decemvirs became the foundation of all subsequent jurisprudence among the Romans; the amendments which they effected on the old laws were favourable to the plebeians. The principal constitutional changes which they carried out were the incorporation of patricians and clients with the plebeian tribes; the investment of the centuries with the powers of an ultimate court of appeal; and the substitution of the decemviral office, of which they themselves were an example, for the consulship, five of the decemvirs to be plebeians. This last change, however, was of short duration; for the second decemvirate was brought to an end by its own depravity. Compelled, by a new secession of the commons, to abdicate, the decemvirs of 305 were succeeded by two popular consuls, under whose auspices several important privileges were obtained for the plebeians, the most important of which was a law conferring on a *plebiscitum*, or resolution of the tribes, the right to become law on receiving the sanction of the patricians, thus enabling the whole people to originate measures as well as the senate. In 310, the plebeians mustered courage to demand that one of the consuls should thenceforward be chosen from their order. To divert them from this, the patricians yielded to another demand—the repeal of the law prohibiting intermarriage between the two orders. The plebeians, however, still persisting in their demand regarding the consulship, the patricians, in 311, offered a compromise, which consisted in breaking down the supreme authority, hitherto concentrated in the consulship, into three offices—the Censorship, the Quæstorship, and the Military Tribunate—with consular powers. The *censors* were to be two in number, chosen for a period of five years, by the curies from among the patricians, subject to the approval of the centuries. The ostensible duty of the censors was the administration of the public revenues; but as they were intrusted with the task of determining the rank of every citizen, and of rating his taxable property, their power was, in reality, enormous. To watch over the moral conduct of the citizens, and to degrade such senators or knights as disgraced their order, were parts of their understood duty. The *quæstors*, two in number, were to keep the public accounts; they were likewise to be patricians, but were to be chosen by the centuries. Regarding the third office, the *military tribunate*, the plebeians were to have the option of this office, consisting of an indefinite number of persons of somewhat less dignity than the consuls, but to be chosen by the centuries from either order indiscriminately, or of consuls to be chosen, as before, from among the patricians only.

This compromise having been accepted, the period from 311 to 350 was one of incessant agitation on the part of the plebeians, of incessant opposition on the part of the patricians, of incessant shifting between the consulship and the military tribunate, according as the patricians or the plebeians were the stronger. On the whole, however, the plebeians gained ground. In 321, the active authority of the censors was limited to eighteen months out of the five years for which they were appointed. In 328, the tribes obtained the right of deliberating on questions of peace and war. In 334, the number of the quæstors was increased to four, to be chosen indiscriminately from either order. Lastly, in 350, or B.C. 404, the system of payment for military service became common. During these forty years the patricians had frequently had recourse to the expedient of appointing a *Dictator*, or supreme magistrate, with unlimited authority for six months. Such an appointment almost always proved a temporary check to the political advancement of the plebeians. In cases of difficulty also, arising from external danger, it was usual to appoint some able man dictator; and it was at such a juncture, in the year 359, that, determined to bring the siege of Veii to a close, the Romans appointed Camillus to this high office.

The siege of Veii having terminated so successfully, the Romans were prepared to resume their career of conquest without, and their political agitations within, when both the one and the other received a check from an unexpected quarter. Some cause, now unknown,

had thrown the Gauls, or Celtic populations inhabiting the western portion of Central Europe, into commotion; and bursting from their native ha[illegible], a mass of these savages crossed the Alps in [illegible] plunder and settlements, established a permane[illegible] abode in the country adjacent to the Po, and pu[illegible] their destructive way through almost the whole length of the peninsula. Rome suffered more severely than any other city. For several months (364–5, or B.C. 390–89) it was in the possession of the savages—its rightful inhabitants, routed in battle, having dispersed themselves for safety through the surrounding country. At length, however, the Gauls were bribed to return to their homes in the north, leaving Rome in ruins.

GRADUAL CONQUEST OF THE PENINSULA—ITALY UNDER THE ROMAN RULE.

The invasion of the Gauls is a great notch in the line of the Roman annals. From this epoch to the time of the complete subjugation of the peninsula by the Romans (365–490, or B.C. 389–264) is a period of 125 years. Of this period, the first fifty years were spent in repairing the shattered Commonwealth. Her strength having been fairly renewed, the republic shook off all impediments, announced to Latins and Hernicans that she required their co-operation no longer, and boldly declared her resolution to conquer central Italy. The series of wars against Etruscans, Latins, Hernicans, Gauls, Volscians, and Samnites, sometimes singly, and sometimes in combination, by which she carried her resolution into effect, is usually known in Roman history by the general designation of 'the Samnite Wars' (412–463), the Samnites being the leaders in this onset of the nations on Rome, the issue of which was to determine whether Rome or Samnium should govern Italy. Extricating herself by her valour from this confused conflict of nations, Rome, about the year 463, found herself mistress of Central Italy—Samnites, Latins, &c. all her subjects. A consequence of the conduct of the Latins and Hernicans during these Samnite wars was, that the famous triple confederacy between these two nations and the Romans was brought to an end precisely when it had fully served its purpose, and when its longer continuance would have impeded the growth in Italy of that Roman unity which it had fostered. 'The Samnite Wars' were succeeded by a short but brisk war, designated in Roman history 'the War with Pyrrhus and the Greeks in Italy.' Pyrrhus was an able and enterprising Greek prince, whom the Greek towns of southern Italy—fearful of being overwhelmed by the conquering barbarians, as they called them, of the Tiber, before whom even the Samnites had given way—had invited over from his native kingdom of Epirus, that he might place himself at the head of a confederacy which they were forming against Rome. Full of enmity towards their conquerors, all the recently-subdued nations of Central and Northern Italy welcomed the arrival of Pyrrhus; and all southern Italy followed his standard. His enterprise, however, failed, notwithstanding several victories; and about the year B.C. 275, Pyrrhus having withdrawn from Italy, the confederacy against the Roman Commonwealth crumbled to pieces, and the whole peninsula lay at their mercy. Before describing the manner in which the peninsula, thus acquired, was laid out and governed by the Romans, it will be necessary to continue our narrative of the gradual development of the constitution within, during the period which had elapsed since the Gaulish invasion.

The situation of Rome after the Gaulish invasion was extremely similar to what it had been after the expulsion of the kings—the plebeians distressed, and many of them in slavery for debt, and the patricians disposed to tyrannise. As on the former occasion there had risen up, as the best friend of the plebs, the noble patrician Spurius Cassius, so on this occasion there appeared as their champion a prudent and brave plebeian, Caius Licinius Stolo, a tribune of the people. His measures were very similar to those of Spurius Cassius—namely, a compromise on the subject of debts (not, however, an abolition of them); and an agrarian law, prohibiting any citizen from occupying more than five hundred jugera (about 330 acres) of the public land, and depriving all who exceeded that quantity of the surplus for distribution among the indigent commons. To these he added a proposal for constitutional reform—namely, that the military tribunate should be abolished, and that the consulship should be reverted to, one of the consuls to be of necessity a plebeian. After a hard struggle, these important measures were carried in the year of the city 384, nineteen years after the Gaulish invasion. Under these Licinian Laws, as they were called, the state enjoyed tolerable repose for a long period of years—the principal source of disturbance being the attempts of the wealthy citizens to evade the operation of the agrarian law. The next great movement was in the year of the city 416, when, under the auspices of a plebeian dictator (for the dictatorship had also been thrown open to the plebeians), a considerable simplification of the constitution was effected. It was now rendered essential that one of the censors should be a plebeian; and the old patrician body of the curies was struck out of the machinery of the legislature, so as to leave the business of the state in the hands of the senate (itself become partly a plebeian body) and the people. Met in their centuries, the people could only accept or reject the measures proposed by the senate; but met in their tribes, they could originate a measure, and oblige the senate to consider it. Thus sometimes in the shape of a matured scheme descending from the senate to the people, sometimes in the shape of a popular resolution sent up to the senate, a measure became law. From this simplification of the constitution commences, according to historians, the golden age of Roman politics. The extension of dominion in the Samnite wars, by providing a large subject-population inferior both to patricians and plebeians, disposed these bodies to forget their differences, and to fall back upon their common consciousness of Roman citizenship. During the Samnite wars, however, a third party appeared in the field claiming political rights. These were the *Ærarians*, the name applied to all those residents in town pursuing mechanical occupations, who, as not belonging to any of the tribes (now thirty-three in number), did not rank as citizens. The claims of this class—the city rabble, as both patricians and plebeians called it—were supported by a daring and able patrician, Appius Claudius, who, during his censorship, admitted ærarians into all the tribes indiscriminately. Eventually, however, a compromise was effected: the ærarians were enrolled in the four city tribes, thus obtaining some influence, but not so much as Appius seemed to destine for them. It appears to have been at some period also during the Samnite wars that a modification took place in the constitution of the comitia centuriata, the leading feature of which seems to have been a blending of the tribes with the centuries, so as to accommodate the assembly to the altered state of society and the altered scale of wealth. Of the precise nature of this change, however, as of the precise time at which it occurred, we are ignorant. It may be considered, nevertheless, to have perfected the Roman constitution, and to have adapted it for the function of maintaining the government of the entire peninsula.

Italy, once fairly subjugated and laid out by the Romans (B.C. 266), its population may be considered as having been distributed into three political divisions—the *Populus Romanus*, or citizens of Rome, properly so called; the *Socii*, or inhabitants of the allied and dependent Italian states; and the *Nomen Latinum*, or citizens of the 'Latin name.'

The first of these, the Populus Romanus, included the whole body of the free inhabitants of the thirty-three tribes or parishes north and south of the Tiber, which constituted the Roman territory strictly so called, together with a considerable number of persons scattered over the other parts of Italy, who were also accounted

citizens, either because they were colonists of Roman descent, or because the title had been conferred on them as an honorary distinction. The total number of adult Roman citizens towards the end of the fifth century was under 300,000—a small proportion, evidently, of the vast Italian mass, which consisted, including the slaves, of about 5,000,000. Nor were all these equal in point of civil rights, many of them having the *franchise*, as it was called, or legal rights of citizens, without the *suffrage*, or political rights. The citizens with suffrage, those who voted on public questions—the real governing power, therefore, by whose impulses all Italy, with its millions of inhabitants, was swayed, as the body is moved by the beats of the heart—were a mere handful of men, such as might be assembled with ease in any public park or square.

The Italian subjects were the inhabitants of the allied or dependent states. The list of these was a long one, including, as it did, the various communities which made up the populations of Etruria, Umbria, the Sabine territory, Samnium, Campania, Apulia, Lucania, Messapia, and Bruttium. All the allies, however, were not equally subject to Rome: the relations in which they stood to it were determined by the particular treaties which formed the separate alliances, and these, of course, varied according to the circumstances under which they had been concluded. Almost all the allied states, however, were permitted to retain their own laws, their own municipal arrangements, their own judges, &c. Throughout the peninsula, however, care was taken to destroy every vestige of nationality or a national legislature among the allies of the same race. Upon the whole, this change from independence to subjection to Rome was beneficial to the Italian nations. Not the least benefit attending it was the total abolition of those wars between neighbouring states which, while the peninsula was subdivided into small independent territories, had raged incessantly and fiercely.

The Nomen Latinum, or Latin name, was a fictitious designation applied to a number of colonies scattered through the peninsula, and which, in respect of privileges, stood in an intermediate position between the Roman citizens and the Italians. The name probably originated in the circumstance, that the original colonists of this description were Latins.

It is a curious fact, that even after Rome had attained the supremacy of the peninsula, there did not exist such a thing as even a dawning Roman literature, although the state had now existed nearly five hundred years; so much earlier than their literary faculty did the native talent of the Romans for governing mankind develop itself. It was by their massive character, more than by their powers of speculation or expression, that they were to impress the world.

THE PUNIC WARS—SUBJUGATION OF FOREIGN NATIONS—ADMINISTRATION OF THE PROVINCES.

Masters of Italy, it was not long before the Romans found themselves in collision with the nations surrounding the great basin of the Mediterranean; and as the last 125 years of the existence of the Roman state had been spent in the gradual conquest of the Italic nations, so the next 130 years (Y. R. 490–620, or B. C. 264–134) were spent in a series of conquests, by which various foreign countries were reduced to the condition of mere provinces of Italy. This series of conquests may be designated generally by the title of 'the Punic Wars, and the Wars with the Greek States.' A bare enumeration of them, with a statement of their results, is all that our limits will allow.

The first foreign people with which the Romans came into collision were the Carthaginians—a people of Phœnician lineage, who, settling in that part of Africa now called Tunis, and building a city there, about a century before Rome was founded, had in the interval become a great commercial nation, with ships sailing to all parts of the Mediterranean, and with colonies along the coasts of Algiers, in Sardinia and Corsica, and even in Spain. They had recently gained a footing in Sicily, and now shared it with the Greeks of Syracuse; and it was on this rich island as a battlefield that the Romans first came into conflict with the merchant people of Africa. Invited over by the Mamertines, a robber people who inhabited the north-eastern corner of the island, the Roman soldiers fought the armies of mercenaries hired by the Carthaginians. The war thus begun, the 'First Punic War,' as it is called, lasted twenty-three years (Y. R. 490–513, or B. C. 264–241). During it the Romans first learned to build ships of war, and to fight naval battles; and they were soon able to defeat the Carthaginians on their own element. On land they were sure of victory against mere mercenaries, collected, as these were, from all nations, and commanded by Carthaginian generals of ordinary capacity. In 249 B. C., however, the Carthaginians sent over the great Hamilcar Barca to command their forces in Sicily; and his efforts checked the Romans, who, meanwhile, had invaded Africa, and been repulsed. A victory or two, however, gained by the Romans over other generals than Hamilcar, disposed the Carthaginians for peace, who accordingly agreed (B. C. 241) to evacuate Sicily, and to pay the victors a large sum of money. The Romans then made themselves masters of Sicily; and shortly afterwards they found a pretext for wresting Corsica and Sardinia from the Carthaginians. For twenty-two years after these conquests (B. C. 241–219) the Romans were engaged in wars with the Cisalpine Gauls and other nations in the north of Italy, the effect of which was to extend their dominion to the foot of the Alps. Beyond the Alps, also, Illyria, a country skirting the east coast of the Adriatic, was at this time annexed to the dominions of the Commonwealth.

Meanwhile the Carthaginians had not been idle. During several years they had, in accordance with the advice of Hamilcar, been establishing their dominion in Spain, intending to repay themselves with that fine peninsula for the loss of Sicily and Sardinia. Killed in battle by a native tribe, Hamilcar was succeeded in Spain by his son-in-law Hasdrubal; and on his death, which took place soon after, Hannibal Barca, the son of Hamilcar, and then only twenty-six years of age, was appointed to the command. The siege by him of Saguntum, an independent Spanish town, which had claimed the assistance of the Romans, led to the Second Punic War (B. C. 218–201). Little did the Romans know what a war it was to be! Crossing the Pyrenees, the young Carthaginian general, the greatest military commander probably, and certainly one of the ablest men the world ever saw, pushed his way through the Gallic tribes, and effecting the passage of the Alps, descended into Italy with an army of 12,000 Africans, 8000 Spaniards, and 6000 Carthaginian horse. Rousing the Cisalpine Gauls, and defeating in several successive battles the Roman generals sent against him, he made his way into the south of Italy (B. C. 217); and having in the following year inflicted on the Romans at Cannæ the greatest defeat they had ever received, he remained in Italy fifteen years (B. C. 217–202), moving hither and thither, keeping seven or eight Roman generals, and among them the wary Fabius and the bold Marcellus, continually employed, scattering the Romans like chaff wherever he appeared, exhausting the finances of the state, and detaching the Italian nations from their allegiance. Had he received reinforcements, as he expected, from Spain, where he had left his brother Hasdrubal in command, Rome might have fallen. Fortunately, however, for the Romans, while they were manfully opposing Hannibal in Italy, one of their generals, the great Scipio, was busily engaged in Spain. To prevent Spain from falling into Scipio's hands, Hasdrubal was obliged to remain in it; and it was not till B. C. 207, when all hope of retaining his footing in that peninsula was lost, that he set out to join his brother. He crossed the Alps in safety, but was attacked, defeated, and slain on his march through Italy; and Hannibal was left to his own resources. These, however, were exhaustless; and with the assist-

ance of the Italian nations, who, especially the unprivileged classes, were friendly to the Carthaginians, and hated Rome, he might still have shattered the Commonwealth in pieces, had not Scipio passed over from Spain into Africa, and defeating the Carthaginians in several battles, with the help of a Numidian prince named Masinissa, compelled them to recall their greatest man for the defence of his native city. In B.C. 202, or the year of the city 552, Hannibal quitted Italy, where he had spent the best period of his life. Not long after his landing in Africa, he was defeated by Scipio at Zama, and his countrymen were obliged in consequence to agree to a peace on very severe terms.

The Second Punic War concluded, and Italy once more pacified, the Romans made war on Philip III., king of Macedonia, and virtual ruler of all the Greek states, who had offended them by entering into a treaty with Hannibal. The war was protracted over seventeen years (B. C. 214–197), but ended in the reduction of Macedonia, and the proclamation by the Romans of the independence of the other Greek states. Seized with a desire to assume the place which the Macedonian king had been unable to maintain, Antiochus the Great, king of Syria, and representative therefore of the Greek empire in Asia, crossed into Greece, where he joined the Ætolians against the Romans. Defeated, however, in Greece, and forsaken by the Ætolians, he was pursued into Asia, and after the loss of a great battle at Magnesia, obliged to submit to the Romans, who thus became virtual masters of the various kingdoms and states of Asia Minor (B. C. 188). Meanwhile they had been engaged in suppressing various movements among the Ligurians, Boians, Istrians, and other nations in the north of Italy, as well as among the Spanish tribes and the savages of Sardinia. A declaration of hostilities by Perseus, the successor of Philip in Macedonia, in conjunction with Genthius, king of Illyria, led to another war against these countries, which terminated in their complete subjugation (B. C. 168). The next twenty years were spent in securing these conquests, and in establishing relations, virtually those of sovereignty, with various states of Asia Minor, such as Bithynia and Rhodes; and with various others of Africa, as Egypt and Numidia. The whole circuit of the Mediterranean in their power, and their ships respected in all its ports, as belonging to the 'sovereign people of Italy,' the Romans at length executed their long-cherished project, and pounced upon Carthage (B. C. 149), whose existence, even in its fallen condition of a mere commercial capital, they could not tolerate. Hannibal had been dead more than thirty years; but under such generals as they had, the wretched Carthaginians offered a desperate resistance to the Roman commanders. After a horrible siege, the city, containing a population of 700,000, was taken and sacked by Scipio Æmilianus, the adopted son of the son of the great Scipio (B. C. 146). The houses were razed to the ground, and the province of Africa was the prize of this third 'Punic War.' The fall of Greece was contemporary with that of Carthage. The Achaian League, a confederacy of cities in Greece proper and the Peloponnesus, showing a disposition to be independent of the Romans, provoked their vengeance; and the destruction of Corinth in the same year as that of Carthage extinguished the last sparks of liberty in Greece. The whole of the Greek countries were parcelled out into Roman provinces, and from that time Greeks became the slave teachers of the Romans, their secretaries, their sycophants, their household wits. Yet out of Greece thus ruined there afterwards arose many great spirits; for no degradation, no series of misfortunes, could eradicate the wondrous intellect which lurked in the fine Greek organisation. The last scene in this long series of wars was enacted in Spain, where, roused by a noble patriot called Viriathus—the Wallace of that day—the native tribes had revolted against the Romans. The fate of Spain, however, was sealed by the destruction of Numantia by Scipio Æmilianus (B. C. 133).

By the wars of 130 years which we have thus enumerated, the following countries had become subject to Rome:—Sicily, Sardinia, Corsica, and the smaller islands of the Mediterranean; Macedonia; Illyricum, with Thessaly and Epirus; Greece, including Greece proper and the Peloponnesus; Spain; and the whole northern coast of Africa. The Romans had likewise established their influence in Asia. The conquered countries were divided into provinces, so that the designation for the Roman dominion became 'Italy and the Provinces.' The provinces received each an organisation at the time of its formation, according to its circumstances. Retaining their national habits, religion, laws, &c. the inhabitants of every province were governed by a military president, sent from Rome, with a staff of officials. Unlike the Italic nations, who furnished only subsidies of men to the sovereign state, the provincials were required to pay taxes in money and kind; and these taxes were farmed out by the censors—Roman citizens, who, under the name of *Publicani*, settled in the various districts of the provinces, and proved a great scourge by their avarice and rapacity. To some towns and localities in the provinces, the Italic franchise was extended as a token of favour. Altogether, the government of the provinces was one which, although it led to beneficial results, in binding together a large mass of the human race, and carrying on various races and languages simultaneously in a career of civilisation, yet gave great scope for oppression. Like a network proceeding from a centre, the political system of the Romans pervaded the mass of millions of human beings inhabiting the shores of the Mediterranean, holding them together by its mechanical tenacity, and slowly working them into union by its own powers of impregnation, as well as by means of those ideas and moral agencies whose dissemination and operation over large areas at once it so marvellously facilitated. What a career was thus opened up for those who occupied the centre of this network—the population of Rome! What a grand thing in those days to be a Roman citizen; so that, wherever one walked—in Spain, in Africa, or even in once great Athens—one was followed, feasted, flattered to one's face, and mocked behind one's back! What means of money-making in the provinces for the avaricious Romans! What opportunities for well-doing for the philanthropic! Alas! a philanthropic Roman was almost a contradiction in terms. To be patriotic was the highest virtue; and if a Roman, along with his patriotism, possessed a just disposition, those who were under his government might consider themselves fortunate. Nor was the career of administration in the provinces open to all Roman citizens. The following passage, which we translate from a French work—'Etudes sur l'Histoire Romaine, par Prosper Mérimée; Paris, 1844'—will give an idea of the manner in which a Roman citizen attained to public honours, and will illustrate the general spirit of the Roman administration. 'The laws,' says this author, 'opened to all the citizens the career of magistracy; but in reality it was shut against all but those whose fortune or family credit placed in an exceptional situation. As all public offices were obtained by the suffrages of the people, it was of the utmost importance to make creatures in every class of society. In order to muster all these on the great day of election, there were no labours, fatigues, and even meannesses to which Romans of illustrious families did not submit from their earliest boyhood. Some offered the patronage of their families to embarrassed pleaders; others opened their purse to poor artisans; whoever had a vote in the comitia was flattered and cajoled in every possible way. From the time that the candidate had attained the age at which the law permitted him to stand for the dignity of the quæstorship—that by which he must make his début in public life—he appeared in the Forum clothed in a white robe, shook hands with all the country folks, and with the lowest plebeians, solicited their votes, and often purchased them for money. The quæstor, once appointed, found the doors of the senate open for him,

Ordinarily he was attached to the person of a consul, or a magistrate of superior rank, becoming his lieutenant; sometimes he obtained a little government for himself. In these offices he could learn business habits, and find occasions for distinguishing himself, and for causing his name to be mentioned often in the senate or the assemblies of the people. After the quæstorship came the *Curule Ædileship*, a purely civil magistracy, whose duties consisted in watching the arrival of provisions, guarding public monuments, seeing to the embellishment of the city, and finally, in preparing the games and solemn shows. This charge entailed enormous expense on those ediles who wished to make themselves popular. They built temples and porticos at their own cost, opened roads, constructed aqueducts; above all, they tried to surpass their predecessors by the magnificence of the games which they caused to be celebrated, and the truly colossal expense of which they in part sustained. A happy man was that edile who had been able to exhibit in the arena the deaths of an unusual number of able gladiators, or who had presented to the people animals of a rare species or unknown before. His name was in every mouth, and all applauded his sprouting ambition. The edileship lasted a year. After it came the prætorship. There were six prætors—two presided over the tribunals at Rome, the others governed provinces or commanded armies. Finally, after having successively gone through the three previous stages, one presented himself as a candidate for the consulship. Intriguing, corruption, manœuvring of all kinds was now redoubled; for this was the goal of a Roman's ambition. The consuls presided over the government of the republic, or directed important wars in person. At the expiry of their magistracy—that is, after a year—they were sent to a province with the title of Proconsuls; often to command military expeditions, almost always to administer an extensive government. In turn to amass and expend great wealth, was thus the chief care of candidates for honours. The profits of the quæstorship enabled one to make a brilliant curule edileship. Ruined by his extravagance, the edile repaired his fortune in the prætorship, and returned to Rome rich enough to buy votes at the consular election. Frequently he staked his all on this last election, confident of more than making it up again in the province which would be assigned him after his consulship. In a word, the career of public employment was a species of gambling, in which one's profits were proportional to one's stakes.'

Such a state of things as is here described, implies that an immense change had taken place in the character of the Roman society during the rapid career of foreign conquest which had elevated Rome from the position of metropolis of Italy to that of metropolis of the civilised world. The distinction between patrician and plebeian was now scarcely heard of (in B.C. 172 both consuls had been plebeians for the first time); it was superseded by that between *illustrious* and *obscure*; *rich* and *poor*. Although, however, the system of corruption was so general, that scarcely any one could attain to office except by unworthy means, yet there were at that time, and in the midst of that system, many men of really noble character. Among these must not be forgotten the honest old censor Cato, the enemy of Carthage, who kept up a constant protest all his life against what he called the growing luxury of his countrymen, and died declaring that they were a degenerate race. Of equal integrity with Cato, although of altogether a different form of character, were the two brothers of world-famous name, whose actions we shall now briefly notice.

THE REVOLUTIONS OF THE GRACCHI.

'A fatal effect,' says M. Mérimée, 'of the Roman domination was the impoverishment and depopulation of Italy. At Rome, where commerce and industry were despised, only one way led to wealth—a career of public service. On his return from his government, a Roman official bought lands, built villas, and all at once became a great proprietor. If he chanced to have in his neighbourhood an estate to his taste, he caused it to be ceded to him; sometimes he seized it while the lawful owner was fighting far away under the Roman eagles. By degrees all the small proprietors were despoiled, in order to form vast estates for the privileged class of public functionaries. Parks, gardens, and expensive fish-ponds took the place of cultivated fields. Labourers disappeared, and the country was peopled with slaves, dangerous by their numbers, and also by their robber habits, which they practised with impunity. Some masters, it is said, shared the profits of robbery with these wretches.'

The great social evils of the day—the extinction of the old peasant proprietors of Italy; and the vast increase of slaves, the danger of which had been already manifested by several servile revolts in Sicily; and the congregation in the towns, and especially in Rome, of vast masses of population, not living as the artisans and traders in modern towns do, by honest industry, but living in noisy idleness upon the alms of the provinces and the sums they received for their votes—these social evils must have struck many generous hearts among the Romans. The man, however, on whom they produced so decided an impression as to lead him to devote his life to their removal, was Tiberius Sempronius Gracchus, the son of a plebeian of rank who had attained distinction in the Spanish wars, and of Cornelia, the daughter of the great Scipio. Abandoning, in its first stage, the more tempting career which led through the quæstorship, edileship, and prætorship to the consulship, Tiberius chose rather the office of tribune of the people, which was more suitable for the purposes of political agitation. Elected to this office B.C. 133, in the twenty-ninth year of his age, he propounded his schemes of reform. His grand project was a revival, with some modifications, of the famous agrarian law of Licinius, which had long fallen into tacit desuetude. All citizens who were in possession of a larger extent of the state land than the 500 jugera allowed by the Licinian law (unless in the case of fathers of two sons, who were to be allowed 250 jugera in addition for each of them), were to be deprived of the surplus; the buildings, vine-presses, &c. which were erected on these surplus lands to be purchased at a fair valuation; and the whole land thus seized was to constitute a stock out of which the pauper plebeians of the city were to be furnished with little farms for the honest support of themselves and families, these farms to be incapable of alienation by the persons to whom they should be allotted. Utterly revolutionary as this measure would seem in modern legislation, and sufficiently sweeping as it was, even in a Roman point of view, considering that, however unjustly the ancestors of many of the large proprietors had come by their lands, yet long possession and frequent transference had in many cases sanctified the ownership—still the measure was strictly in the spirit of Roman law, and one of the supporters of Gracchus in proposing it was the eminent jurist Mucius Scævola. Tiberius and his associates probably thought that the ends proposed—the removal of the venal mob out of Rome, and the restoration in Italy of a population of hard-working peasant proprietors, instead of the gangs of bandit slaves—were difficult enough to require, and glorious enough to justify, somewhat revolutionary means. Accordingly, advocating by his eloquence in the Forum the scheme which he had matured in private, he did not cease until, in spite of the most obstinate resistance on the part of the senators, who used as their instrument against him one of his own colleagues in the tribuneship, he had gained his end. Three commissioners were appointed to superintend the execution of the law—Tiberius himself, his father-in-law Appius Claudius, and his younger brother Caius. Loud and deep were the vows of vengeance on the part of the senators; and Tiberius saw that his only chance of life lay in being re-elected to the tribuneship, the dignity of which

was an inviolable protection. To prevent this, the senatorial party mustered all their strength; and a tumult ensuing on one of the days of election, Tiberius, along with about 300 of his followers, was killed.

For about ten years the excitement caused by the law of Gracchus continued, Fulvius Flaccus and Papirius Carbo acting as his successors in the popular interest, and carrying on the struggle against the nobles, who raised up obstacles to the execution of the law. But in the year B.C. 123, Caius Gracchus, who now felt himself old enough to assume the career which his brother had left him as an inheritance, claimed and obtained the tribuneship. Caius was a man of more vehement character and more comprehensive views than his brother, and the schemes which he proposed embraced a great variety of points, besides a re-enactment of his brother's agrarian law. In fact, a reformer by reputation and education, he made it his business to find out abuses, and either declaim against them or propose remedies for them. Perhaps the most objectionable of his measures was a law enacting a monthly distribution of corn among the city population at a nominal price—a poor-law, for such it may be called, which had the effect of attracting all the paupers of Italy to Rome. A more valuable measure was his transference of the judicial power from the senators, who had hitherto held it, and who had been guilty of great corruption in the exercise of it, to the *equites*, or wealthy capitalists, intermediate between the senators and the poorer classes of the community. He also proposed and carried the establishment of various colonies in different parts of the empire, which afforded room for enterprise, thus relieving Rome of part of its overgrown population. More fortunate so far than his brother, he held the tribuneship for two years, and thus had time for more extensive action. Deserted, however, by the people at the end of the second year, in consequence of the policy of his opponents, who adopted the plan of outbidding him for popular favour, he lost his office. The senators, having him at their mercy, spared no means of revenge; and Gracchus, and his friend Fulvius Flaccus, having recourse to the armed assistance of their supporters to preserve their lives when they appeared in public, this was construed into a design of sedition. The consul was empowered to resort to force against them; a terrible fray occurred in one of the quarters of the town, 3000, it is said, being slain; and Gracchus was killed while trying to escape into the country (B.C. 121). He was then only in the thirty-third year of his age.

The aristocracy thus triumphed for the time, and the recent measures of reform were suffered to fall into disuse; but certain portions of the policy of the two brothers had taken full effect, and the agitation which they had originated was not lulled for many years. The seeds of much that afterwards appeared in storm and bloodshed were sown during these movements of B.C. 133–121; and as long as the world takes an interest in Roman history, or respects disinterested political courage, it will remember the Gracchi.

THE JUGURTHINE, CIMBRIC, AND SOCIAL WARS—MARIUS AND SULLA.

In the year of the first tribuneship of Caius Gracchus, the Balearic islands were added to the Roman dominion; and six years afterwards (B.C. 117), Dalmatia was reduced to a Roman province. About this time the famous Jugurtha, the illegitimate son of one of the sons of Masinissa, already mentioned as a king of Numidia in the Roman interest, was left heir to that kingdom, in conjunction with his two cousins, by Micipsa, their father and his uncle. Aspiring to the undivided sovereignty, he killed one of his cousins, and drove the other to Rome. Interfering in behalf of the expelled prince, the Romans compelled Jugurtha to share Numidia with him. By bribing the commissioners, however, who were sent to effect the division, Jugurtha obtained the best part for himself; and not long after (B.C. 112), he showed his contempt for the Romans by invading his cousin's dominions, and putting him to death. Bribes and wily tactics protected him for a while from the vengeance of the Romans; but at length, in the year B.C. 109, the brave consul Metellus, who was proof against bribes, went over to Numidia to conduct the war which his predecessors had mismanaged. After he had carried on the war successfully for two years, he was supplanted by his second in command, Caius Marius, a man of humble birth, and nearly fifty years of age, who, although almost without education, had raised himself to high rank by his military talents, and whose services under Metellus had been so favourably represented at Rome, that he was appointed consul (B.C. 107), with the express intention that he should end the Jugurthine war. This he speedily accomplished, greatly assisted by his quæstor, a young man of high patrician family and unusual literary accomplishments, named Lucius Cornelius Sulla. Jugurtha was sent to Rome, where he was starved in prison (B.C. 106); and the services of Marius were at the disposal of the Romans for a war of an infinitely more formidable character than that which had been waged against this ill-fated African.

About the year B.C. 113, a numerous tribe of savages, called Cimbri, but who were most probably Celts, had been set in motion in the south-east of Europe; and emigrating westward, they had communicated their restlessness to the Teutones, an undoubtedly German race, through whose territories they must have passed. Roving about in quest of settlements, sometimes together, and sometimes separately, the two barbarian hosts, consisting of men, women, and children, had thrown all Gaul into consternation; and as the Romans had already colonised the portion of Gaul contiguous to the Alps, the duty of checking the savages devolved on them, the more especially as there was some danger that Italy would be invaded. But such a moving mass of human beings, driven by that hardest of forces, hunger, was not easily to be checked; and army after army sent by the Romans to oppose them had been shivered to pieces. All Italy began to tremble, and there was a universal cry among the Romans, 'Make Marius again consul.' Accordingly Marius was chosen consul a second time in his absence (B.C. 104), that he might drive back the Cimbri. Meanwhile the poor homeless creatures had made a general rush towards Spain; and the Romans, to secure the services of Marius when they should be required, re-elected him to the consulship in B.C. 103, and again in B.C. 102. In the latter year, when Marius was consul for the fourth time, the barbarians, repulsed from Spain, directed their march towards the Alps. Fortunately, they divided themselves into two masses—the Teutones taking one route, the Cimbri another. The former, amounting to about 300,000 men, were met by Marius, and slaughtered, all except 90,000, who were made prisoners, and sold as slaves. Meanwhile the Cimbri had been making progress in their route, and to oppose them, Marius was elected to a fifth consulship (B.C. 101). Another bloody field, in which about 140,000 were slain, and 60,000 taken prisoners, delivered Italy from its fears. Strange and affecting thought, that half a million of human beings, men, women, and children, should be wandering through Europe for years, poor outcasts, with their little carts and cooking-kettles, and that a civilised nation should have been compelled, by the necessity of self-preservation, to take means to sweep them out of existence!

Marius was rewarded for his exertions with a sixth consulship (B.C. 100), which, there being now no enemy to call forth his military activity, he employed in political schemes for the humiliation of the aristocratic or senatorial party, to which, both by the accident of birth and on principle, he was a determined enemy. The efforts of the nobles, however, assisted by the violent conduct of the partisans of Marius, especially a tribune named Saturninus, occasioned a reaction; and on the expiry of his consulship, Marius withdrew from Rome, and undertook a journey to the East, where the Roman

influence was extending itself. During the following ten years the political agitations were incessant, the liberal spirit of that party of which Marius was the head developing itself every year in fresh manifestations, and the aristocratic party becoming every year more fierce and dogged in their opposition. On the aristocratic side, the ablest and most earnest man, although not yet the most distinguished, was Sulla—the former quæstor of Marius, and who had since been employed in various capacities both military and civil. At length, in the year B.C. 90, a storm which had been long gathering burst out in that war which is denominated in history 'the Social or Marsic War,' or 'the War of Italian Independence.'

As early as the tribuneship of Caius Gracchus, a clamour had been raised for the emancipation of the various Italian states from the thraldom in which they were held by the Romans. The progress of time welding the various Italian nationalities into one common society, and giving to all parts of the peninsula a common interest, had made them sensible to the grievances arising from their subordinate condition. The system of a triple franchise—Roman, Latin, and Italian—inevitable perhaps at first, had now become a source of gross injustice. To put an end to this injustice, the Italians demanded the full Roman franchise. Caius Gracchus wished to bestow it on them; and from the time of his death, 'Italian emancipation' had been one of the watchwords of the liberal party. Despairing of effecting their end by agitation, and especially provoked by a recent persecution of the Italian tradesmen who had settled in Rome, the Italian nations had recourse to arms (B.C. 90). Ten of these—namely, the Picani, the Vestinians, the Marrucenians, the Marsians, the Pelignians, the Samnites, the Frentanians, the Hirpinians, the Lucanians, and the Apulians, constituted themselves into a confederacy for the destruction of Rome, and the foundation of a new Commonwealth, of which Corfinium, under the new name of Italica, was to be the capital, and which was to embrace the whole peninsula. Fortunately for Rome, the Latins (including the various colonies of the Latin name throughout Italy), the Etruscans, the Umbrians, and the Campanians, did not join the confederacy. The Latins were instantly rewarded with the Roman franchise, and the field was taken against the confederacy. During two years, the war was carried on vigorously on both sides, the most distinguished of the Roman generals being Marius, Sulla, and Cneius Pompeius Strabo. At length (B.C. 89), the Italians having been greatly reduced, and the whole peninsula having suffered much, the Romans saw fit to yield to demands which many even of those whose patriotism led them to fight against the allies believed to be just. The Roman citizenship was extended to all the nations of the peninsula south of the Po, the new citizens being either distributed, according to one account, among eight of the old tribes, or arranged, according to another, in fifteen new ones. At the same time the Latin franchise was conferred on the Gauls between the Po and the Alps.

Sulla had gained greater distinction in the Marsic War than Marius, who was now verging on old age. The public eye was consequently turned to Sulla; and as, on the appearance of the Cimbric hosts twenty years before, the Romans had placed their dependence on Marius, so now, on the breaking out of a war in the East, they placed their dependence on his younger rival. Mithridates VI., the young king of Pontus, an Oriental by birth, but of Greek education, and a man of splendid abilities, had been for some years silently extending his dominions in western Asia; and the Romans, long jealous of his movements, had at length openly warned him to desist. Mithridates scouted the warning; marched through Asia Minor, putting the Romans to the sword; and was welcomed everywhere by the Asiatic Greeks as a deliverer from the Roman yoke: ultimately (B.C. 88), crossing over into Greece, he menaced the Empire nearer its centre. Sulla, then engaged with the Samnites, the last dregs of the Social War, was chosen consul, and invested with the command against the Eastern monarch. He was then in the forty-ninth year of his age. Vexed at the preference of his rival, the grim old Marius used all his efforts to have the appointment cancelled, and himself nominated to the Mithridatic command. His political opinions recommending him to many, and a tribune named Sulpicius having procured the passing of a preliminary measure distributing the new Italian citizens among all the old tribes, which had now attained the number of thirty-five, he at length carried his point, and Sulla was superseded. But the aristocratic general was not a man to be trifled with. Marching from the south of Italy, where he was when he heard the news, he appeared with his army before the city, forced his entrance through the rotten walls, dislodged his antagonists from the houses from which they were throwing stones and missiles at his men, and compelled Marius and his adherents to save their lives by a precipitate flight. Marius escaped to Africa; Sulla, after settling affairs at Rome, set out for Greece. Here he speedily retrieved the Roman losses; sacked Athens, which had provoked him by its opposition; and reduced Archelaus, the general of Mithridates, to such extremities, that having crossed into Asia, Mithridates was glad to conclude a peace with him (B.C. 84), by which he renounced all he had gained, and agreed to pay the expenses of the war. Meanwhile a terrible reaction had occurred at Rome in Sulla's absence. Scarcely had he left the city (B.C. 87), when Lucius Cornelius Cinna, one of the consuls whose appointment he had sanctioned, proclaimed himself on the popular side, and commenced a series of measures directly opposed to Sulla's views. His colleague Octavius drove him from Rome, and the senate deposed him from the consulship. The Italians, however, gathered round Cinna; Marius and his fellow-exiles hearing of the movement, hastened back to Italy; all the able military men of the Marian party, and among them a young and generous commander named Sertorius, exerted themselves to raise troops; and at length the aristocratic party found themselves besieged in Rome. Famine and a pestilence began their ravages in the city; and the senate, reinstating Cinna in the consulship, capitulated on the understanding that blood should not be shed. But there was little softness in the nature of Marius. Admitted into the city, the stern old man, who was already tottering on the brink of the grave, revenged his wrongs by a frightful massacre, in which many men of distinction fell. Marius then caused himself to be elected to a seventh consulship (B.C. 86), his colleague being Cinna. He enjoyed the unprecedented honour but a few days, dying on the 13th of January (B.C. 86), and Valerius Flaccus was named his successor. Flaccus, setting out with authority to supersede Sulla in the Mithridatic war, was murdered by his legate Flavius Fimbria, who assumed the command of the army, and gained some successes; but being afterwards hard pressed by Sulla, and deserted by his army, committed suicide. This occurred about the time of the conclusion of the peace with Mithridates (B.C. 84); and Sulla, after settling the affairs of Asia Minor, and draining the country of money, so remorselessly as to affect its prosperity for a century, commenced his journey homewards, with bloody purposes against Cinna and his adherents, and an army ready to execute them.

Cinna did not live to face his dreadful enemy. Murdered by his soldiers in his fourth consulship, he left, as his successors in the leadership of the popular party, Caius Marius the Younger, Papirius Carbo, and the brave Sertorius—the two former of whom were chosen consuls for the year B.C. 82, to oppose Sulla in Italy, while Sertorius was despatched to Spain to secure that province. But Carbo and the younger Marius, even when backed by the brave Samnites and other Italian nations, were not equal to a contest with such a general as Sulla, assisted as he was by commanders like Metellus, Lucullus, and young Cneius Pompeius Strabo, more commonly called Pompey, the son of that Pom-

palus who had been one of the Roman generals in the Marsic War. The popular armies were defeated; Marius killed himself; Carbo fled to Africa; and Sulla remained master of Italy. Fearful was his vengeance. The massacre which Marius had ordered five years before, was slight compared with the butcheries which took place by the command of Sulla. In Rome, and over all Italy, every man of distinction implicated in the popular movement was sought out and slain. Proscription lists, as they were called—that is, lists of doomed individuals—were published; and soldiers were ready to track them out for the prices put upon their heads. Military colonies were likewise planted in all parts of Italy—lands being taken by force for that purpose: thus purging Italy of the Marian leaven, Sulla was resolved to create in it a new population, which should be pliant to aristocratic influence.

The work of the soldier over, Sulla commenced that of the legislator. Appointed perpetual dictator B.C. 82, he continued for three years to exercise the sovereignty, making alterations in the constitution, the general effect of which was to lessen the power of the people in political affairs, and reforming the criminal law. In B.C. 79, he surprised every one by abdicating the dictatorship, and retiring into private life; and in the following year he died of a loathsome and incurable disorder, brought on by his debaucheries. Among other evidences of Sulla's literary accomplishments, he left memoirs of his own life composed in Greek.

POMPEY—CICERO—CATILINE—CÆSAR.

After the death of Sulla, the most distinguished man of the aristocratic party was Pompey, who had been engaged in reducing Sicily and Africa to allegiance after his chief had triumphed in Italy. Some attempts were made to revive the Marian cause after the dictator's death, but by the exertions of Pompey and others they were suppressed, and only in Spain had the Marian party still a stronghold. There the brave Sertorius, at the head of the Marian refugees and the native Spaniards, was fast establishing a power likely to rival that of Italy. None of the Sullanian generals, not even Pompey, who went to Spain in B.C. 76, could gain an advantage when opposed to his splendid generalship; and had he not perished by treachery (B.C. 74), Spain would have become an instrument in his hands for overturning all that had been done by Sulla in Italy. Possibly even Spain might have superseded her sister peninsula as the seat of Roman power. But after the death of Sertorius, his army crumbled away; and, conquering his successor Perpenna, Pompey found the pacification of Spain an easy task. Returning to Italy in the height of the reputation which the discharge of this office procured to him, he arrived (B.C. 71) in time to have some share in another war of a frightful character which had been desolating Italy in his absence. In the year B.C. 73, seventy gladiators, headed by a Thracian named Spartacus, had broken out of a school, or rather gladiator warehouse, at Capua, where they were kept in training; and, speedily joined by all the slaves and gladiators of the neighbourhood, they had taken up their position on Mount Vesuvius. Finding himself at the head of a large army, Spartacus had given battle to several Roman generals, and defeated them; and the conquering host which he commanded was on the point of crossing into Sicily, after ravaging Italy, when it was attacked and cut to pieces by the prætor Licinius Crassus (B.C. 71). Spartacus died fighting; such of the gladiators and slaves as were taken prisoners were crucified, or impaled alive; and the remnant which had escaped Crassus were met and destroyed in the north of Italy by Pompey, as he was returning from Spain. Pompey and Crassus were chosen consuls for the year B.C. 70, the former being then in his thirty-sixth year. Although both were disciples of Sulla, yet, obeying the necessities of the time, they repealed several of his enactments, and passed various measures of a liberal tendency.

Pompey was at this time the idol of Rome; and although after his consulship he retired into private life, he was soon called upon to exercise his abilities in a post of greater dignity and responsibility than had ever been formally conferred on any Roman before him. The Mediterranean was at that time infested with pirates, who had become so numerous and so audacious during the recent convulsions, that the coast of the Italian peninsula itself was not safe from their attacks, and not a ship could sail from any port in the Roman dominions, even in the service of government, without the risk of being captured. To enable Pompey to free the Empire from this nuisance, he was invested (B.C. 67) with supreme command for three years over the whole Mediterranean and its coasts for 400 stadia inland, with power to raise as many men and ships and as much money as he chose. Thus virtually made master of the Roman world, Pompey exerted himself so vigorously and judiciously, that within the short period of three months he had cleared the sea of every pirate vessel. That his command might not lie dormant for the remainder of the three years for which he had been appointed, a tribune of the people proposed and carried a law conferring on him the additional command of Pontus, Bithynia, and Armenia, in order to secure his services in finishing a war which was then going on with Mithridates. This was the third war with that monarch; for there had been a second short war with him B.C. 83–81. The present war had originated in some overtures made by Sertorius to Mithridates in B.C. 74; but Sertorius having died in the same year, Mithridates was left to maintain the war alone. The general sent to oppose him was Lucullus, who carried on the war very successfully till Pompey came to supersede him. For four years Pompey remained in Asia, breaking the power of Mithridates, and negotiating with the monarchs of Parthia, Armenia, &c. He traversed the greater part of Asia Minor, establishing the Roman influence; dethroned the king of Syria, and added it and Phœnicia to the number of the Roman provinces; entered Palestine, where a civil war was then raging between the brothers Hyrcanus and Aristobulus, declared in favour of the former, besieged and took Jerusalem, and having imposed a tribute on the Jews, commenced his march homewards. On his return through Asia Minor, he found that Mithridates had in the meantime killed himself in despair; and as there was no one to take up that monarch's part, he was able to parcel out Asia Minor as he chose—erecting some portions into provinces, and giving others in charge to tributary princes. With the glory of having thus subjugated and settled the East, the fortunate Pompey prepared to return to Rome in the year B.C. 62.

Meanwhile Rome had been the scene of one of the most extraordinary attempts at revolution recorded in history—the famous conspiracy of Catiline. No passage in Roman history is involved in such obscurity as this; for the accounts of the conspiracy left by Sallust and other Latin authors are not nearly so satisfactory to the genuine student of history, as they are pleasant to the mere reader for amusement. M. Mérimée supposes that, several years after Sulla's death, there arose in Rome four distinct parties—the 'oligarchical faction,' consisting of the small number of families, the chiefs of which directed the senate, and in fact governed the republic; the 'aristocratic faction,' comprehending the mass of the senators, anxious to exercise the power which they saw usurped by a small number of their colleagues; the 'party of Marius,' including all those whose families had been persecuted by Sulla, and who now began to rally, and aspire to power; and lastly, the 'military faction,' embracing a crowd of old officers of Sulla, who, having squandered the fortunes they had gained under him, and seeing themselves excluded from public affairs, were eager for some convulsion which might improve their condition. At the head of the first party was Pompey, now absent in Asia. In his absence, the soul of the oligarchical party was the celebrated Marcus Tullius Cicero—an advocate

of extraordinary intellect, born B.C. 106, a few months after Pompey, and who, entering public life early, had soon established his reputation as the first orator in Rome. Of plebeian birth, it might have been expected that he would attach himself to the democratic side; but circumstances, and his natural disposition, which was weak, and fond of the consideration of others, had won him over to the side of the oligarchy, to whom his talents were invaluable. Having passed through the quæstorship, edileship, and prætorship, which last he held B.C. 66, he now aspired to the highest dignity in the state. Such was the leader of the oligarchical party. The leader of the aristocratic party was Crassus, formerly the colleague of Pompey in the consulship, and now his personal rival. Besides Crassus, the senators had an active and most conscientious partisan in Marcus Porcius Cato, who had been tribune of the people—a great-grandson of Cato the Censor, and possessed of all his integrity. The leader of the third or Marian party was a man six years younger than Pompey or Cicero, and who, known during his youth for his accomplishments, his love of pleasure, his firmness of purpose, and the boundless generosity of his character, had just earned for himself the applauses of all Rome by the lavish magnificence of his edileship (B.C. 65). This was Caius Julius Cæsar, the greatest man that ever Rome produced. He was the son of a man who had died suddenly, without having made any figure in public life; his family was one of the noblest in Rome; and his aunt had been the wife of Marius. Literature and pleasure had occupied his youth, and only now was he beginning to take an active part in public affairs, although with a force and earnestness which at once marked him out as a man who was to lead. With a chivalrous recklessness of consequences, he had done justice to his uncle's memory at a time when it was hardly safe to mention the name of Marius; and now the relics of the Marian party gathered round him with hope, while the oligarchy and aristocracy, with the presentiment of what he was to become, would fain have crushed him. Nine years older than Cæsar, and three years older than Cicero or Pompey, was the leader of the fourth or military faction—Lucius Sergius Catilina, more commonly called Catiline, a man of illustrious birth, and who had distinguished himself as one of the ablest and most ferocious officers of Sulla. His reputation, owing partly to his haggard personal appearance, and partly to vague rumours of horrible crimes which he had committed, was one of the blackest; and as he walked along the streets with gigantic body, but hurried and uncertain step, men pointed, and said that that was Catiline. Yet he possessed extraordinary abilities, and a peculiar power of fascinating those with whom he wished to establish a friendly relation. He had already been prætor (B.C. 67), and there was a large class, consisting principally of debauched young patricians and ruined military men, who looked forward eagerly to his election to the consulship.

Prevented, by a charge of extortion brought against him in his capacity of prætor, from becoming a candidate for the consulship of the year B.C. 65, Catiline came forward as candidate in the following year. Cicero was his rival; and the senators mustered in sufficient strength to return the orator. Enraged at his defeat, Catiline began to plot a seditious movement with his patrician adherents, among whom were Lentulus, Cethegus, Cæparius, Statilius, &c. Rome, it was said, was to be set on fire, and the consuls and many of the senators murdered. Towards the end of the year (B.C. 64), these designs had become ripe, and emissaries of Catiline were abroad throughout Italy. Meanwhile Cicero had obtained private intelligence of the conspiracy, and on the 8th of November he addressed Catiline in such vehement terms in the senate-house, that the conspirator fled into Etruria, from which he continued to correspond with his accomplices in Rome. Having obtained satisfactory proofs of the guilt of these accomplices, and having been empowered by the senate to act as he chose for the good of the state, Cicero caused Lentulus, Cethegus, Statilius, and Cæparius to be apprehended; and these four, notwithstanding the motion of Cæsar for a more moderate punishment, were put to death in prison; Cicero's activity had saved the Commonwealth. Catiline, however, who had raised troops in Etruria, continued to menace the state till the beginning of B.C. 62, when he and many of his patrician supporters died fighting like lions against the troops sent to destroy them. Thus the insane movement of the military faction was crushed: there remained, however, much of the Catilinarian leaven diffused through Italy—men of broken fortunes and profligate characters, to whom turmoil and riot afforded the only chance of promotion.

THE TRIUMVIRATE—CÆSAR'S GALLIC WARS—WAR BETWEEN CÆSAR AND POMPEY.

When Pompey returned to Rome (B.C. 61), he found the senatorial party predominant, and Cicero incessantly talking about the Catilinarian conspiracy, and how he had crushed it. Pompey enjoyed a triumph more splendid than any conquering general had received before him; and the sums which he added to the public treasury were enormous; yet he could not procure from the senate that general ratification of his measures in Asia to which he thought himself entitled. Cato and other senators insisted on a full investigation of his measures one by one, ere the sanction which he required should be granted. This conduct on the part of the senators brought Pompey into closer connection with Cæsar; and these two eminent men, finding that they agreed in many of their views, and that at least they were at one in their opposition to the senate, resolved to unite their forces so as to work for their common ends with double strength. For various reasons, it was found desirable to admit Crassus to this political partnership; and accordingly, in the year B.C. 60, was formed that famous coalition for mutual support between Pompey, Crassus, and Cæsar, which is known in Roman history by the name of the 'First Triumvirate.' Elected to the consulship of the year B.C. 59, Cæsar infused new life into Roman politics, proposing measures of so liberal a nature, and persevering in them with such obstinacy, that the senate became almost frantic, and his colleague Bibulus shut himself up in his house for eight months in disgust. Among these measures was a ratification of Pompey's proceedings in Asia, and an agrarian law for providing lands for Pompey's disbanded soldiers and a number of destitute citizens. In the same year Cæsar gave his daughter Julia in marriage to Pompey, who had already been married twice. On retiring from the consulship, he obtained, by an unusual stretch of generosity on the part of the grateful people and the intimidated senate, the supreme command for five years over the two Gauls (Cisalpine and Transalpine) and Illyricum. This was probably the great object of Cæsar's desires; at all events, it was the best possible thing which could have happened for him and the republic. Master of Gaul, and with an army devoted to his will, he could there mature his power silently and undisturbed, and qualify himself for entering, at the proper period, upon the career for which he was destined, and rescuing, by military force, the ill-governed Empire out of the hands of contending factions.

The condition of affairs in Rome during Cæsar's absence in Gaul was indeed such as to prove the necessity of some radical change in the system of the Commonwealth. All was confusion and violence. Clodius, a profligate relic of the Catilinarian party, having been elected to the tribuneship of B.C. 58, procured the banishment of Cicero for his conduct in the affair of the conspiracy. In the following year, however, Clodius having in the meantime made himself generally odious, Cicero was recalled. Pompey and Crassus were elected consuls for the year B.C. 55. Mindful of their connection with Cæsar, who was of course in constant correspondence with them, they procured a prolongation of his command over the Gauls

for a second period of five years; at the same time obtaining for themselves—Pompey, the government of Spain for five years; and Crassus that of Syria and the adjacent countries for a similar period. In B.C. 55, Crassus set out for the scene of his command, where, soon afterwards, he perished in a fruitless expedition against the Parthians; Pompey remained at home, governing Spain by deputies. During several subsequent years, Rome was in a state of anarchy and misrule—the streets perambulated by armed mobs, partisans on the one hand of Clodius, and on the other of a powerful citizen called Milo, between whom a feud was carried on, as desperate and bloody as any that ever distracted a European town in the middle ages. In one of the numerous scuffles which took place between the contending parties, Clodius was killed; and taking advantage of the opportunity, the tottering government asserted its rights by bringing Milo to trial, and procuring his banishment.

Meanwhile the remedy was preparing. Among the marshes and forests of Gaul, the great Cæsar was accumulating that strength of men and purpose with which he was to descend on Italy and shiver the rotten fabric of the Commonwealth. 'Fain,' says the eloquent Michelet—'fain would I have seen that fair and pale countenance, prematurely aged by the debaucheries of the capital—fain would I have seen that delicate and epileptic man, marching in the rains of Gaul at the head of his legions, and swimming across our rivers, or else on horseback, between the litters in which his secretaries were carried, dictating even six letters at a time, shaking Rome from the extremity of Belgium, sweeping from his path two millions of men, and subduing in ten years Gaul, the Rhine, and the ocean of the north. This barbarous and bellicose chaos of Gaul was a superb material for such a genius. The Gallic tribes were on every side calling in the stranger; Druidism was in its decline; Italy was exhausted; Spain untameable; Gaul was essential to the subjugation of the world.' Cæsar's Gallic wars of themselves form a history. We have an account of them yet remaining from the pen of the conqueror himself, and that of his friend Hirtius. Suffice it to say, that in eight years (B.C. 58-50) Cæsar had conquered all Gaul, including the present France and Belgium; had paid two visits to the island of Great Britain (B.C. 55-54); and was able, in the spring of B.C. 50, to take up his residence in Cisalpine Gaul, leaving the 300 tribes beyond the Alps, which he had conquered by such bloody means, not only pacified, but even attached to himself personally. His army, which included many Gauls and Germans, were so devoted to him, that they would have marched to the end of the world in his service.

Cæsar's conquests in Gaul were of course a subject of engrossing interest at Rome, and when the city enjoyed an interval of repose from the commotions caused by Clodius and Milo, nothing else was talked of. 'Compared with this man,' said Cicero, 'what was Marius!' and the saying was but an expression of the popular enthusiasm. Cæsar's visits to Britain excited especial interest; and at first there were not wanting sceptics who maintained that there was no such island in existence, and that the alleged visit of Cæsar to that place of savages, where pearls were found in the rivers, was a mere hoax on the public. As, however, the period of Cæsar's command drew near its close, and it became known that he aspired to a second consulship, the fears of the aristocratic party began to manifest themselves. 'What may not this conqueror of Gaul do when he returns to Rome!' was the saying of Cato and others of the senators. 'Accustomed during so many years to the large and roomy action of a camp, will he be able to submit again to civic trammels! Will he not rather treat us as if we were his subordinate officers—Roman laws as if they were savage customs—and our city itself as if it were a Gallic forest!' Unfortunately, also, the Triumvirate no longer existed to support Cæsar's interests. Crassus was dead; and Pompey—whose connection with Cæsar had been severed by the death of his wife, Cæsar's beloved daughter Julia (B.C. 54)—had since gone over to the aristocratic party, to which he had formerly belonged, and whose policy was, upon the whole, more genial to his character. In B.C. 52, he enjoyed a third consulship, without a colleague, having been appointed by the senators as the man most likely to restore order to the distracted state; and during the following year, he lent his aid to those enemies of Cæsar who insisted that, ere he should be allowed to stand for the consulship, he should be obliged to resign his Gallic command, and resume his station as a private citizen, ready to meet any charges which might be brought against him. Cæsar did not want agents in Rome—some of them paid, some of them voluntary—to plead his cause; and through these he offered to resign his command, provided Pompey would do the same with regard to Spain. The proposal was not listened to; and a decree of the senate having been passed that Cæsar should disband his army against a certain day, under pain of being treated as a public enemy, his agents left the city, and hastened to his camp in Cisalpine Gaul (B.C. 50).

Cæsar did not delay a moment. Sending orders to his various legions distributed through Gaul to follow him as speedily as possible, he placed himself at the head of such forces as were with him at the instant, crossed the small stream called the Rubicon, which separated his province of Cisalpine Gaul from Italy, and advanced towards Rome, amid cheers of welcome from the populations which he passed through. Utterly bewildered by his unexpected arrival, the whole senatorial party, with Pompey at their head, abandoned Rome, and proceeded into the south of Italy, where they tried to raise forces. Cæsar pursued them, and drove them into Greece. Then hastening into Spain, he suppressed a rising Pompeian movement in that country. Returning to Rome with the title of Dictator, which had been bestowed on him in his absence, he passed various salutary measures for restoring order in Italy, and among them one conferring the Roman citizenship on the Cisalpine Gauls; then crossed over into Greece (B.C. 49) to give battle to Pompey, who had meanwhile assembled forces from all parts of the Roman dominion. At length the two armies met on the plain of Pharsalia in Thessaly (9th August B.C. 48), when Pompey sustained a complete defeat. Not long afterwards he was killed by the orders of Ptolemy, king of Egypt, when seeking to land on the coast of that country. Cæsar, who had used his victory with great moderation, arrived in Egypt soon after, and remained there several months, fascinated by Cleopatra, who was then at war with her brother Ptolemy.

Having settled the affairs of Egypt, Cæsar proceeded to Asia Minor, crushed an insurrection there headed by Pharnaces, the son of Mithridates, and then (September B.C. 47) returned to Italy. He remained there but a few months, setting out in the beginning of B.C. 46 for Africa, where the relics of the Pompeian party had taken refuge. These were soon defeated; and Cato, the most distinguished man among them, killed himself rather than fall into the conqueror's hands. Pompey's two sons escaped to Spain, where they excited an insurrection, which, however, was soon suppressed.

EXTINCTION OF THE COMMONWEALTH—DICTATORSHIP AND DEATH OF CÆSAR—THE SECOND TRIUMVIRATE—CIVIL WARS OF MARK ANTONY AND OCTAVIANUS.

From August B.C. 48, when he defeated Pompey at Pharsalia, till March B.C. 44, when he was assassinated, Julius Cæsar was supreme master of the Roman world. Senate and people vied with each other in conferring dignities upon him; and all the great offices and titles recognised by the Roman constitution—as consul, dictator, censor, tribune, &c.—were concentrated in his person, while he exercised the virtual patronage of almost all the rest. In short, the Commonwealth may be said to have ceased when he defeated Pompey; and had he lived long enough, there is no doubt that he would have fully established the Empire. It was not so much,

however, in organic changes of the constitution, as in practical reforms of vast moment, that Cæsar exercised the enormous power which had been placed in his hands. Besides the various measures of reform which he actually carried into effect during his dictatorship, among which his famous reform of the Calendar deserves especial mention, there were innumerable schemes which he had projected for himself, and some of which he would probably have executed, had his life not been cut short. To extend the Roman dominion in the East; to drain the Pontine marshes; to cut through the Isthmus of Corinth; to prepare a complete map of the Roman Empire; to draw up a new digest of Roman law; to establish public libraries in the metropolis—such were a few of the designs which this great man entertained at the time when the conspiracy was formed which led to his assassination. At the head of this plot, which consisted of about sixty persons of note, were Brutus and Cassius, both men of the highest abilities, and esteemed by Cæsar; and the former at least actuated by motives of the purest character. The immediate occasion of the conspiracy was the rumour that Cæsar intended to accept the title of king, which some of his adherents were pressing upon him. When the plot was matured (B. C. 44), it was resolved that Cæsar should be assassinated in the senate-house on the ides (the 15th) of March, on which day it was understood a motion was to be brought forward by some of his friends for appointing him king of Italy. 'Upon the first onset,' says Plutarch, 'those who were not privy to the design were astonished, and their horror at the action was so great, that they durst not fly, nor assist Cæsar, nor so much as speak a word. But those who came prepared for the business enclosed him on every side, with their naked daggers in their hands, and which way soever he turned he met with blows, and saw their swords levelled at his face and eyes. Brutus gave him one stab in the groin. Some say that he fought and resisted all the rest, and moved from one place to another, calling for help; but when he saw Brutus's sword drawn, he covered his face with his robe, and quietly surrendered himself, till he was pushed, either by chance or by design, to the pedestal on which Pompey's statue stood, which by that means was much stained with his blood: so that Pompey himself may seem to have had his share in the revenge of his former enemy, who fell at his feet, and breathed out his soul through the multitude of his wounds; for they say he received three-and-twenty.'

The assassination of Cæsar has justly been pronounced 'the most stupid action that ever the Romans committed.' The later ages of the republic had been one continued scene of violence and anarchy; and not until Cæsar had risen to the chief power in the state was there a restoration of order and efficient government. His assassination plunged the Roman dominions into new and complicated civil wars. On the one side were the conspirators, with Brutus and Cassius at their head, bent on the futile project of throwing back the Empire into the condition of a republic. On the other were Mark Antony, an able and valiant officer of Cæsar's; Lepidus, another officer of less distinguished abilities; and Marcus Octavius, a young man of eighteen, Cæsar's grandnephew, and who, as his uncle's heir, now assumed the name of Caius Julius Cæsar Octavianus. These three united themselves into a triumvirate (November B. C. 44) for avenging Cæsar's death, and settling the affairs of the republic. After making themselves masters of Italy, and putting to death by wholesale proscription all those citizens whose views they suspected, among others the great and amiable Cicero, they pursued the conspirators into Greece. At length, in the autumn of B. C. 42, two great battles were fought at Philippi in Macedonia between the republican forces and those of the triumvirate. The former were defeated; Cassius caused himself to be slain, Brutus committed suicide, and the triumvirs thus remained masters of the Roman world. They divided it among them: Antony assuming the government of the East, Lepidus obtaining Africa, and Octavianus returning to Italy, master of the countries adjacent to that peninsula. Each continued to govern his share for some time independently; but a quarrel ensuing between Octavianus and Lepidus, the latter was deprived of his power, and obliged to retire into private life. The Empire was now divided between Antony and Octavianus, the former master of the East, the latter of the West. At length, however, political and private reasons led to a rupture between the two potentates (B. C. 33). The rash and pleasure-loving Antony, who had been caught in the toils of Cleopatra, the licentious queen of Egypt, and therefore one of his subject sovereigns as master of the East, was no match for the cunning, abstemious, and remorseless Octavianus. Defeated at the battle of Actium (2d September B. C. 31), he fled with Cleopatra to Egypt, where, being hard pressed by Octavianus, they both died by their own hands. Octavianus thus remained sole master (B. C. 30) of the great Empire which Julius Cæsar had prepared for him; and under the new name of Augustus, he continued to wield the sovereignty during the long period of forty-four years (B. C. 30—A. D. 14). During these forty-four years, the various races and nations which so many centuries of conquest had connected together, became consolidated into that great historic entity—'The Roman Empire.'

CONDITION OF THE EMPIRE UNDER AUGUSTUS.

The Roman Empire under Augustus consisted of Italy and the following countries governed as provinces:—In *Europe*, Sicily, Sardinia, and the other islands in the west of the Mediterranean, Gaul as far as the Rhine, Spain, Illyricum, Dalmatia, Pannonia, Thrace, Macedonia, Greece, and the islands of the Ægean; in *Asia*, all the countries between the Caspian Sea, the Parthian Empire, the Persian and Arabian Gulfs, the Mediterranean, and the Caucasus; and in *Africa*, Mauritania, Numidia, the ancient territory of Carthage, Cyrene, and Egypt. Within these limits there may have been included, in all, about 100,000,000 of human beings, of different races, complexions, languages, and degrees of civilisation. Not less than one-half of the whole number must have been in a condition of slavery, and of the rest, only that small proportion who, under the envied name of Roman citizens, inhabited Italy, or were distributed, in official or other capacities, through the cities of the Empire, enjoyed political independence. These 'citizens,' diffused through the conquered countries, constituted the ingredient by which the whole was kept in union. Working backwards and forwards in the midst of the various populations in which they were thus planted, the Romans assimilated them gradually to each other, till Celts, Spaniards, Asiatics, &c. became more or less Romanised. This process of assimilation was much facilitated by the circumstance that, with the exception of Judea and other portions of the East, all the nations of the Roman Empire were polytheistic in their beliefs, so that there was no fundamental repugnance in this respect between the modes of thought of one nation and those of another. In fact, the Roman Empire may be defined as a compulsory assemblage of polytheistic nations, in order that Christianity might operate over a large surface at once of that polytheism which it was to destroy and supersede. In the twenty-fifth year of the reign of Augustus, and while that prince was ruling with undisturbed sway over 100,000,000 of fellow-polytheists, there took place in that small monotheistic corner of his dominions which lay on the southern border of the Levant, an event, the importance of which the wisest of the Romans could not have foreseen. This was the birth, in an obscure Jewish town, of Jesus Christ. From that town, and from that obscure corner of the vast Roman Empire, was to proceed an influence which was to overspread the polytheistic nations, eat out or dissolve into itself all existing creeds and philosophies, and renovate the thoughts, the habits, the whole constitution of mankind. Waiting for this influence, the various nations—Celts, Greeks, Spaniards, &c.—were submitted

to the preliminary pressure of Roman institutions, modifying, and in some cases changing, their native characters. The eastern half of the Empire, however, had been too thoroughly impregnated with the Greek element to yield easily to the new pressure; and accordingly while the Latin language spread among the barbarians of the west, Greek still continued to be the language of the East. This demarcation between the western or Latin-speaking and the eastern or Greek-speaking portions of the Empire became exceedingly important afterwards.

Of this vast empire Rome was the metropolis, now a city of innumerable streets and buildings, and containing, it is calculated, a population of about two millions and a-half. From Rome roads branched out in all directions leading to the other towns of Italy, and passing through the villa-studded estates of the rich Roman citizens. From the coasts of Italy, the Mediterranean afforded an easy access to the various provinces, by whose industry the metropolis and Italy itself were in a great measure supported. The provinces themselves were traversed by roads connecting town with town, and with all parts of the Empire open to the civil and military functionaries of government. Usually residing at Rome, the will of the emperor vibrated through a hierarchy of intermediate functionaries, so as to be felt throughout the whole of his vast dominions. In effect, this will was absolute. In Augustus, as in Julius Cæsar, all the great offices of state, which had so long subsisted as mutual checks upon each other, were united, so as to confer on him power of the most unlimited description. The senate still met, but only as a judicial body in cases of treason, or legislatively to pass the decrees which Augustus had previously matured with a few private counsellors; and the comitia were still held, but only to elect candidates already nominated by the emperor. In this system of absolute dominion in the hands of a single individual, the Romans cheerfully acquiesced, partly from experience of the superior nature of the government thus exercised to the wretched anarchy from which they had escaped, and partly in consequence of the hopelessness of revolt against a man who had the entire military force of the Empire at his disposal. In Rome and Italy, the public peace was preserved by the *prætorian cohorts*—bodies of soldiers of tried valour, to whom Augustus gave double pay. Throughout the provinces, the people were kept in check by the regular troops, who were accumulated, however, principally in the frontier provinces of the Empire, where they might both maintain tranquillity among the recently-conquered populations, and resist the attacks of the barbarian races beyond. The provinces where military force was required, Augustus retained in his own hands, administering them through legates appointed by himself, usually for several years; the others he intrusted to the senate, who named governors for a single year.

The cities of the Empire were the centres of Roman influence. It was in them that the Roman citizens were congregated, that schools were established, and that the various agencies of civilisation operated most uniformly. In the rustic populations of the provinces, the national individuality was preserved with the national language. It was part of the policy of Augustus to found cities in the choicest situations in the provinces; and so rapid was the spread of the Roman civilisation during his reign, that Roman writers and orators of note began to be produced even in remote parts of the Empire. The Greek language and literature began also to penetrate the provinces of the West, and to find students among the Celts and Spaniards.

THE SUCCESSORS OF AUGUSTUS—DISSEMINATION OF CHRISTIANITY—DIVISION OF THE EMPIRE.

During a period of nearly three centuries after the death of Augustus, the Empire remained, so far as political arrangements were concerned, pretty nearly as he had left it; and the history of Rome during these centuries is little more than an account of the personal characters of the successive emperors. Some of these seem to have been specimens of the utmost depravity to which human nature could attain; others were men of great mind, and worthy of their station. At first, the Empire was inherited as a birthright by those who could claim descent from Augustus; but in the end, the real patrons of the sovereign dignity were the armies, and especially the prætorian cohorts. To raise favourite generals to the purple, and afterwards to murder them for the sake of the donations which it was customary to receive in the case of a new accession, became the pastime of the various armies; and sometimes it happened that there were several emperors at the same time, different armies throughout the Empire having each appointed one. The effect of these military appointments was to raise to the highest dignity of the state men born at a distance from Rome, and who, spending their lives in the camp, entertained no affection for the city of the Cæsars. Meanwhile, under all the emperors alike, the great family of nations incorporated under the Roman rule were daily advancing towards that condition out of which modern society was to arise. The reader, however, must imagine for himself the toil and bustle of the successive generations of Celts, Spaniards, Greeks, Africans, and Asiatics, who were born and buried during these three important centuries in which modern civilisation was cradled; all that we can give here is a chronological list of the emperors during that period:—

Augustus,	from	30	B.C. to	14	A.D.
Tiberius,	...	14	A.D. to	37	...
Caligula,	...	37	...	41	...
Claudius,	...	41	...	54	...
Nero,	...	54	...	68	...
Galba, Otho, Vitellius,	...	68	...	70	...
Vespasian,	...	70	...	79	...
Titus,	...	79	...	81	...
Domitian,	...	81	...	96	...
Nerva,	...	96	...	98	...
Trajan,	...	98	...	117	...
Hadrian,	...	117	...	138	...
Antoninus Pius,	...	138	...	161	...
Marcus Antoninus,	...	161	...	180	...
Commodus,	...	180	...	192	...
Pertinax,	...	193			
Septimius Severus,	...	193	...	211	...
Caracalla,	...	211	...	217	...
Heliogabalus,	...	218	...	222	...
Alexander Severus,	...	222	...	235	...
Julius Maximinus,	...	235	...	238	...
Gordian,	...	238	...	243	...
Philip,	...	243	...	249	...
Decius,	...	249	...	251	...
Gallus,	...	251	...	253	...
Valerian and Gallienus,	...	253	...	260	...
Gallienus,	...	261	...	268	...
Aurelius,	...	268	...	270	...
Aurelianus,	...	270	...	275	...
Tacitus,	...	275	...	276	...
Florian,	...	276			
Probus,	...	276	...	282	...
Carus,	...	282	...	284	...
Diocletian and Maximian,	...	284	...	305	...

The only facts connected with the reigns of these emperors which need be noticed here are, that in the reign of Claudius, Britain was added to the Roman dominion; that under the great Trajan, the Empire was still farther extended; and that under Caracalla, the Roman franchise was extended to all the free inhabitants of the Empire. The vices of such emperors as Caligula, Nero, Commodus, Caracalla, and Heliogabalus, may pass unnoticed, as may also the military achievements of some of the later emperors. The reign of Diocletian, however (A.D. 284–305), constitutes an epoch in the history of the Empire. Finding the unwieldy mass too great for the administration of a single individual, he divided it between himself and his colleague Maximian, assigning to Maximian the western or Latin-speaking nations, and retaining the East in his own hands. Under each emperor there was to be a royal personage called Cæsar, who was to govern part of that emperor's section of the Empire, and afterwards succeed him in the chief dignity. This arrangement did not last long; and after various subdivisions of the

Empire, and struggles between emperors and Cæsars, the whole was reunited under Constantine the Great (A.D. 306–337). Under this remarkable man Christianity was established as the religion of the Empire.

During the three centuries which had elapsed between the crucifixion of Christ—which took place in the nineteenth year of the reign of Tiberius—and the accession of Constantine to the supreme government of the whole Empire, the new religion had been silently but surely spreading itself; first among the Jews, then among the Greeks or eastern, and lastly among the Latin or western Gentiles. It had been subjected to numerous persecutions, some local, and others general, over the whole Empire; but had, nevertheless, made such progress, that it is calculated that in Constantine's reign about a twentieth part of the whole population of the Empire were professed Christians, while even over the nineteen-twentieths who continued in polytheism, the indirect influence of Christianity had been immense. Led to embrace Christianity himself, although with a considerable tincture of polytheistic superstition, Constantine gave his imperial recognition to the already fully-organised ecclesiastical system of the Christians, with its churches, presbyters, bishops, and metropolitans. The civil ban having thus been removed from the profession of Christianity, it began to prevail in form, as it already did in fact, over the heterogeneous polytheism of the Empire.

Another important act of Constantine's reign, besides his proclamation of toleration for Christianity (A.D. 321), was his removal of the seat of empire from Rome to Constantinople. Not long after this was effected, Constantine died at the age of sixty, leaving the Empire divided among his three sons. One of them, Constantius, ultimately acquired the whole, and transmitted it to his successors; but in the year 395, Theodosius, one of these successors, effected a permanent separation between the East and the West. From that date, the history of Rome divides itself into two distinct histories—that of the Western or Latin, and that of the Eastern or Greek empire. The latter protracted its existence till A.D. 1453, when Constantinople was taken by the Turks: the former crumbled to pieces much earlier, before the attacks of the northern barbarians, who finally destroyed it in 476.

DOWNFALL OF THE WESTERN EMPIRE.

From an early period, the Empire had been assailed on its northern frontier by the German and Sclavonian races living east of the Rhine and north of the Danube. Partly by force, and partly by negotiation, the authorities of the Empire had been able to keep these barbarian populations in check; but towards the end of the fourth century, the growing decrepitude of the Empire tempted invasion, and hordes of barbarians from Scandinavia, Russia, and Tartary, rolled themselves towards the Danube. At first, it seemed as if the eastern empire would be the first to fall before them; but the tide of invasion was at length decisively diverted towards the west. Province after province was torn away by Goths, Alans, Huns, Vandals, and others: Italy itself was ravaged several times; and at length, A.D. 476, Romulus Augustulus, the last sovereign, was dethroned, and Italy became a prey to the Germans. The various steps in this gradual disintegration of the Empire, the heroic deeds of the two chief agents in the dismemberment—Alaric, king of the Goths, and Attila, king of the Huns—and the gradual formation of Romano-Germanic kingdoms out of fragments of the shattered Roman society, cannot here be detailed.

In the chaos into which the Western Empire was thrown by the Germanic invasions, three distinct elements were discernible—the old Roman or Romanised population; the Christian church; and the freshly-infused German vitality. By the interaction of these three elements, modern European society has been evolved; and to trace this evolution in France, England, Spain, Italy, &c. is the object of the succeeding number—THE HISTORY OF THE MIDDLE AGES.

ROMAN LITERATURE.

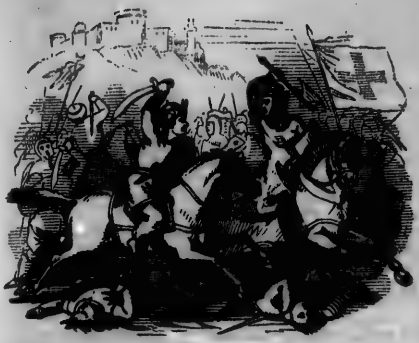
It has already been mentioned, that for the first five centuries of their existence as a people, the Romans possessed no literature. A great and conquering nation, and inheriting from their Etruscan progenitors a large share of the practical knowledge possessed by that singular people, it was not till they came in contact with the Greeks that the Romans began to develop their faculties in literary compositions; and then, as was natural, their first productions were translations from, or imitations of, Greek writers. Livius Andronicus and Cneius Nævius (B.C. 240), the earliest Roman poets, seem to have been copyists of the Greek; as were also Fabius Pictor and Cincius Alimentus, the first Roman annalists, and who lived during the Second Punic War. Between the Second Punic War, however (B.C. 202), and the dictatorship of Sulla (B.C. 81), there arose a number of writers of no ordinary power, in whose hands the Latin language acquired force and flexibility, and whose works illustrate the native character of the Romans. Among these should be mentioned Ennius, the father of Roman poetry; Plautus, his contemporary, a man of rich comic genius; the elder Cato, the first prose writer of note; and Terentius or Terence, a comic poet of a less rude style than Plautus, and whose first play was acted in the year B.C. 165.

The period from the dictatorship of Sulla (B.C. 81) to the death of Augustus (A.D. 14) is the golden age of Roman literature. Then flourished Cicero, undoubtedly the greatest as well as the most voluminous of Roman prose authors, whose orations and philosophical disquisitions are still read with pleasure; Cæsar, whose brief 'Commentaries' on his own campaigns are among the simplest and most compact of historical writings; his friend Sallustius or Sallust (born B.C. 68), who has left us spirited, if not unprejudiced, accounts of the Jugurthine War and the conspiracy of Catiline; the didactic poet Lucretius; his contemporary, Catullus, whose lyrical effusions are among the sweetest and most truly poetic things in the Latin language; and, not to mention a host of others, Virgil and Horace, the two chief classic poets of the Augustan age—the former the author of the celebrated epic poem the 'Æneid,' and if not an original, at least a graceful and pathetic writer; and the latter a sagacious and good-humoured observer of mankind, and the author of many odes, satires, and epistles. Somewhat later were Livy, the great historian of Rome, in 142 books, only thirty-five of which, however, have reached us; and Ovid, who ranks second to none of the Roman poets for ease and elegance.

Under the emperors, the Latin authors became more and more numerous, springing up in all parts of the Empire, and cultivating all departments. Out of the long list of authors intervening between the reign of Tiberius and that of Commodus, we may mention the poets Italius, Lucan, and Silius Italicus; Martial, the writer of epigrams; Seneca, the Stoic philosopher, put to death by Nero; Quinctilian the rhetorician; Pliny, the celebrated natural historian, who was killed A.D. 79 by the great eruption from Vesuvius which destroyed the city of Herculaneum; Tacitus, the historian of the declining age of Rome; and Juvenal, whose satires reveal too horribly the immorality of the society in the midst of which he lived.

The host of petty rhetoricians, poets, &c. both Greek and Roman, who lived in the various cities of the Empire in the second, third, and fourth centuries, may be passed over. During these centuries Christianity was overspreading the Empire, and drinking up all the intellect and enthusiasm of the various nations; and nothing more strikingly marks the decrepitude of polytheism at that time, as compared with the freshness of the new religion, than the contrast between the miserable verse-making, which seemed to be the only literary occupation practised in polytheistic circles, and the earnest and powerful writings of the Christian fathers on those great theological topics which concerned the Divine nature and the everlasting destinies of man.

HISTORY OF THE MIDDLE AGES.



UNDER the title of the Middle Ages is comprehended that period of history which succeeded the destruction of the Roman western empire (see preceding sheet), and extended to the end of the fifteenth or beginning of the sixteenth century, when learning was revived in Europe. This period of about eight hundred years may be said to divide ancient from modern times. The early portion of the middle ages is sometimes styled the Dark Ages; for during this time the ancient civilisation of Rome, a bequest from Egypt and Greece, disappeared, and ancient institutions perished, without anything better being substituted. The middle ages altogether differ from any other period in history. They may be generally described as an era of universal disorder, in which was maintained a struggle between force and reason. Old governments were broken up, and new ones took their place, only to be dismembered in turn. Literature sunk into obscurity, and was confined to the cells of monks. Slavery was universal, and was modified alone by the benign influence of Christianity. Gradually, as it will be seen, nations assumed a settled character, arts were discovered, and for military turbulence were substituted peaceful institutions. Much, therefore, as there is to deplore in the history of the middle ages, there is not a little to commend and be grateful for. We must view these ages as being the cradle of modern civilisation, the era whence sprung much that we venerate in our institutions, much that distinguishes modern from ancient manners.

THE EASTERN EMPIRE TO THE TWELFTH CENTURY.

It is necessary to begin a history of the middle ages with a reference to the decline of the Roman Empire. This decline was caused by various circumstances, but chiefly by the weakened condition of society. Instead of rearing a respectable lower and middle class, the Roman aristocracy kept the mass of the people in slavery, so that at length society consisted of but a comparatively small number of privileged persons, including the military, and vast numbers of serfs or slaves—the hangers-on of great men—and in effect paupers. 'The freedom of the ancient world expired in the course of ages,' says Alison, 'from the small number of those who enjoyed its benefits. The ruling citizens became corrupted from the influence of prosperity, or by the seductions of wealth; and no infusion of energy took place from the lower ranks to renovate their strength or supply their place.' Besides this general, there was a special cause. In 321, Constantine transferred the imperial abode from Rome to Byzantium, a city situated on the Bosphorus, and afterwards called Constantinople. In his endeavours to make this city the seat of government, Constantine only partially succeeded; for it generally happened after his day that there was one emperor in the East and another in the West, and not unfrequently two or three different individuals in the provinces, at the head of considerable military forces, claiming partial and even universal empire. Rome itself, and the countries of western Europe, were soon taken possession of by barbarous intruders, and lost all the characteristics and individuality of empire; but Constantinople continued for a thousand years the abode of men who had still the name of emperors, and reckoned themselves the descendants of the Cæsars, although they had long ceased to wield anything but the shadow of power. Constantine was himself instrumental in dismembering his empire, having before his death divided it among no fewer than five individuals—namely, his three sons, Constantine, Constans, and Constantius, and his two nephews, Dalmatius and Annibalianus, both of whom bore in addition the surname of Cæsar—a name still popular among a people who wished themselves to be considered Roman.

Constantine II. soon fell a sacrifice to the cruelty and ambition of his brother Constans, who in his turn lost his life in attempting to quell a revolt among his subjects; and Constantius, the youngest of the sons, having found means to destroy the two Cæsars, and five other cousins, and two uncles, found himself at an early period of life the undisputed master of the empire. He reigned twenty-four years, but left no monuments of goodness or of greatness, having wasted his time in the practice of vice, or in the equally unprofitable, if more innocent, employment of disputing with bishops on the abstrusest points of doctrinal theology; while a host of enemies, apparently from every side of his dominions, were engaged in undermining and laying waste the empire. It was in the West that these attacks were first made, though perhaps it was in the East that they were fiercest. Numberless and powerful barbarians now began to pour unceasingly upon Gaul, Spain, and latterly upon Italy itself, from the forests of the north, and in particular from those of Germany—a country whose inhabitants have been remarkable in the history of the world, both as having originated many of the greatest movements in society, and as having laid open more of the sources of human thought than any other people that could be named. The Franks, Saxons, Goths, and Alemanni, devastated the fine countries watered by the Rhine, and so effectually severed them from the Empire, that from this period their history becomes wholly separate. At the same time the Sarmatians, Persians, Scythians, and others, made dreadful incursions in the East. All that Constantius could do to stem this powerful tide was to raise his kinsman Julian, whom he surnamed Cæsar, to command in the army.

Julian had been early instructed in the Christian religion, but he is not known to have ever given it any credit, although he has been often called apostate. He had imbibed the philosophy of Plato in the schools of Athens; and with this learning, with the elements of a great character in his mind, and with the models of Cæsar, of Trajan, and of Marcus Antoninus in his eye, he formed the design, and seemed to have the ability, to raise up and consolidate the glories of the falling Empire. His victories over the Alemanni in Gaul, although they preserved the Empire, excited only the envy of the emperor, and Constantius was about to depose him from his command, when his own death saved him from the ignominy to which the soldiery would certainly have subjected him for any attempt to de-

grade their favourite commander. Julian was himself declared emperor by the army, and the people had lost both the power and the will to resist. Unfortunately for his fame, Julian perished in battle with the Persians only three years after his accession. In that short period he had reformed many abuses in the state; and though personally hostile to the Christian religion, and though he used both arguments and ridicule against it, he not only advocated, but practised universal toleration. It is creditable also to Julian, that in establishing the ancient orders of Roman priesthood, he was at pains to enforce a strict morality in all the relations of life. He was succeeded, after the fall of several candidates, by Valentinian, whose father had been a soldier from the Danube. This emperor took for colleague his brother Valens, to whom he assigned Constantinople and the government of the East. The reign of Valens was signalised by the irruption into Europe of an enemy till then unknown to the Romans; these were the *Huns*, a confederation of Tartar tribes, some of whom had obtained the ascendancy and control over the rest, and led them on to invade the nations of Europe. Their numbers and ferocity led the ancient writers to describe them in terms of consternation, which to moderns, who are no strangers to Calmucs, Cossacks, Tartars, and other tribes of similar origin, appear sufficiently ludicrous. They never lived in houses, slept under trees, ate raw flesh, and were altogether superior in war even to the Goths, who were now in alliance with the Romans, and had begun to relish the comforts of a settled life. They were, therefore, driven away before the Huns, and were forced, in search of a home, to invade the Roman territory. Here they were opposed by the Emperor Valens; but they defeated his army, and made his own life a sacrifice. He was succeeded by his nephew Gratian, who chose for his colleague Theodosius, a general of talents and celebrity. This emperor restored the confidence of his own army, and broke the power of the Goths, by his skill and caution; and was the first of the emperors who practised the mode of dividing the barbarians against one another, by giving money to such of their tribes as he imagined would make useful auxiliaries. This system, which the wealth of the emperors (from their possession of all the maritime and trading cities) enabled them long to use against their poorer enemies, often saved the Empire at the expense of its dignity; for though the money was given at first as a gratuity, it was sometimes demanded in times of weakness as a tribute. This Theodosius (commonly called the Great) was the first who made Christianity the established religion of the Empire (390). He procured a senatorial edict in favour of the Christians and their religion, sanctioned the destruction of the heathen temples, and forbade the performance of sacrifices, either in public or private. The Empire under this prince still preserved its original extent; but he divided it between his two sons, Arcadius and Honorius (394), and its parts were never afterwards reunited.

From the death of Theodosius II. (449) to the reign of Justinian (527), the Eastern Empire continued without any considerable alteration, though there were many changes and intrigues in the court and army. The reign of the latter prince is memorable on several accounts: it was under his auspices that a knowledge of the silk manufacture was first brought to Europe, where it gave employment to much ingenious industry (960). Justinian also caused certain eminent lawyers to prepare a code of laws, and an abridgment of law decisions, &c. called the Pandects, which were used by all his successors, and have been adopted as the basis of their laws by several countries of Europe. With the single exception of the *Code de Napoleon*, these form the only complete and perfect abstract of national law which any government has given to its people (see No. 54). Whatever may have been Justinian's errors, his having projected this work, and procured so many able ministers to execute it, must redound for ever to his honour. The talents and virtues of his general Belisarius regained to the Empire Africa and great part of Italy, from the Vandals and Ostrogoths; this conquest, however, only prevented the latter region from being united under one government, and has been the cause of its remaining a feeble and divided country ever since. In the reign of Tiberius shortly after (580), the people of Rome, though they intreated with great earnestness the aid and pity of the emperor, who now claimed to rule over them, were unable to obtain any relief, and remained distracted between their attachment to the ancient head of the Empire, and the claims of his enemies who occupied the rest of Italy.

The next emperor who merits attention is Heraclius (610), a native of Africa. The Eastern Empire had till now preserved its ancient boundaries in their full extent, and was mistress of Carthage, Egypt, Syria, and Asia Minor, besides Greece, and the countries on the Danube. The Roman armies on the eastern frontier had, however, been lately driven in by Chosroes, king of Persia, who now occupied all the north of Africa and Syria. This was the first great violation of their territory sustained by the emperors of Constantinople; and Heraclius avenged it with a celerity and effect which made the Persians tremble. His triumph, however, was short, for the latter part of his reign was disturbed by the rise and victories of Mohammed. The successors of this signal impostor, after breaking the power of Persia (already weakened by the victories of Heraclius), immediately attacked the Roman Empire; then defeated its armies in two battles, occupied all Syria, and obliged the emperor (now an old man) to retire to Constantinople. He died in 641.

The continued victories of the followers of Mohammed (called Arabs or Saracens) soon deprived the Empire of Egypt, Africa, and Syria; and in 668 they followed up their success by attacking Constantinople itself. The city sustained two sieges, in the first of which the Saracens were encamped in its neighbourhood, and carried on the operations of a siege at intervals, for seven years; and in the second, for nearly two. In both the Saracens wasted immense resources ineffectually.

The Empire had now lost all its provinces eastward of Mount Taurus, and the cities of Alexandria, Jerusalem, and Antioch, were in the hands of the Mohammedans. There was little further change in its condition till the year 867, under the Emperor Basil, who gave new vigour both to the internal administration and to the military resources of the government. This prince, and his immediate predecessor Zimisces, made the Roman arms—for they still wished to be called Romans—respected on the Euphrates and Tigris, and asserted the ancient warlike reputation and boundaries of the Empire. They were now, however, deprived of the resources they had enjoyed in the secure possession of the great commercial cities of the Mediterranean—Alexandria, Carthage, Cæsarea, &c.; and the trade and revenues of those which remained were crippled and diminished, from the want of that free general intercourse which had existed when they were all under one government. Hence the armies were maintained with greater difficulty, and any victories that were gained could not be followed up with effect. The early enemies of the Empire—the Goths, Vandals, and Huns—had now settled into civilised communities, and were no longer formidable. The foes with whom it contended latterly were the Bulgarians and Seljukian Turks; the former of whom were rather troublesome than dangerous, but the latter, who had succeeded the Saracens in the dominion of Asia, aimed at nothing short of the destruction of the Roman name. They succeeded at last by defeating and taking prisoner the Emperor Romanus Diogenes, in tearing away almost the whole province of Asia Minor (1099); so that the emperors were now confined to their dominions in Europe, which, however, still formed a monarchy not much smaller than France or Spain.

The manners of the court of Constantinople during much of this period were dissolute and corrupt. We are told of one emperor who ordered a plate of human

noses to be brought to his table; another was accustomed to seize the deputies of cities whose tribute was in arrear, and suspend them with their heads downwards over a slow fire; a third got up farces in mockery of the ceremonies of religion; and, in general, the appointment of officers, and even the succession to the Empire (where it was not seized by some successful general), was in the hands of the women and eunuchs of the palace. The cities and provinces generally acquiesced as to the choice of an emperor in the decision of the capital or army; this circumstance shows that the laws were attended to, and that there was a regular system of government, which was not much disturbed by the personal character of the reigning prince. The countries of Greece, however, which had formerly been the seat of knowledge and the arts, were now sunk in ignorance; and the little learning that was cultivated in Athens was only scholastic divinity, or the pedantry of law and grammar. There is no scholar, or philosopher, or poet of the empire of Constantinople who is generally known to posterity.

A great change took place in the relations of the Empire after the eleventh century. It was still pressed by the Turks on the East, who now occupied Asia Minor, and were only separated from Constantinople by the Hellespont; while in Europe its territories were disturbed by the incursions of certain Norman adventurers who had settled in Sicily. Against these enemies the Emperor Claudius Comnenus, an active prince, and full of resources, made all the resistance which his diminished revenues allowed. He applied to the Christian sovereigns of Europe to aid him in expelling the Mohammedans from the territories of the Empire, but above all, to drive out the Turks from the land of Judea, which they occupied and profaned, and where they harassed the Christian pilgrims who desired to visit the scenes of Scripture history. His appeal was received in Europe at a time when many concurring causes had brought the mass of the people to a state of uneasiness which at once foreboded and rendered necessary some extensive change in their condition. Countrymen of their own, pilgrims from the shrine of the tomb of Christ, had returned and filled them with horror by a recital of indignities which Turkish infidels were casting on those scenes and subjects with which their own most sacred feelings were associated; and the result was that extraordinary outpouring of the inhabitants of Europe upon Asia, which has been termed the Crusades, and to which we shall afterwards advert.

ARABIA—MOHAMMED—EMPIRE OF THE SARACENS.

It was not before the sixth century that Arabia became peculiarly remarkable in the history of the world. The wild Arabs, as they have been generally called, had already signalised themselves by incursions on the Empire of the East, when Mohammed was born, in the year 569 (some say, 571) of the Christian era at Mecca, the principal city of their country. He is said to have been descended from some great families; but it is certain that his immediate progenitors were poor, and he had little education but what his own means and his own mind could give him. Yet this man became the founder of a great empire, and the fabricator of a religion which has continued to our own day to affect greater numbers of mankind than Christianity itself. At an early period of life, we are told, 'he retired to the desert, and pretended to hold conferences with the Angel Gabriel, who delivered to him, from time to time, portions of a sacred book or Koran, containing revelations of the will of the Supreme Being, and of the doctrines which he required his prophet (that is, Mohammed himself) to communicate to the world.' The Mohammedan religion, as the so-called revelations of this great impostor have since been designated, was a strange mixture of the superstitions of Arabia, the morality of Christ, and the rites of Judaism. It was to this happy mixture of tenets, usages, and traditions already existing among his countrymen, and to the applicability of the precepts of the Koran to all legal transactions and all the business of life, that Mohammed seems to have owed his extraordinary success. Others, indeed, have attributed this to certain indulgences allowed in the Koran; but in reality these indulgences existed before, and the book breathes upon the whole an austere spirit. This extraordinary work inculcated elevated notions of the Divine nature and of moral duties: it taught that God's will and power were constantly exerted towards the happiness of His creatures, and that the duty of man was to love his neighbours, assist the poor, protect the injured, to be humane to inferior animals, and to pray seven times a day. It taught that, to revive the impression of those laws which God had engraven originally in the hearts of men, He had sent his prophets upon earth—Abraham, Moses, Jesus Christ, and Mohammed—the last, the greatest, to whom all the world should owe its conversion to the true religion. By producing the Koran in detached parcels, Mohammed had it in his power to solve all objections by new revelations. It was only after he was well advanced in years that his doctrines began to be received. At first, indeed, they were so violently opposed by his fellow-citizens of Mecca, that the prophet was obliged to flee from the city to save his life. This event is called by his followers *Hegyra*, or the Flight: it occurred in the 622d year of the Christian era; and they reckon dates from it as we do from the birth of Christ (see CHRONOLOGY, Vol. I.). Mohammed took refuge in the city of Medina, and by the aid of his disciples there, he was soon able to return to Mecca at the head of an armed force. This enabled him to subdue those who would not be convinced; and henceforward he proceeded to make proselytes and subjects together, till at length, being master of all Arabia and of Syria, his numerous followers saluted him king (627). This extraordinary man died suddenly, and in the midst of successes, at the age of sixty-one (632). Abubeker, his father-in-law and successor, united and published the books of the Koran, and continued and extended the empire which Mohammed had left him (see MOHAMMEDANISM, No. 76).

A more powerful caliph (such was the title given to this series of monarchs) was Omar, the successor of Abubeker (635). Barbarity, ferocity, and superstition seem to have been mingled and to have reached their height in the person of Omar. It was by his order that the most magnificent library of antiquity, that of Alexandria, consisting of 700,000 volumes, was burned to ashes. The reason which he gave for this act is worth preserving:—'If these writings,' he said, 'agree with the Koran, they are useless, and need not be preserved; if they disagree, they are pernicious, and ought to be destroyed.' By himself and his generals this ferocious conqueror added Syria, Phœnicia, Mesopotamia, Chaldea, Egypt, Lybia, and Numidia, to his empire. Next came Otman, and then Ali, the son-in-law of Mohammed himself. The name of Ali is still revered by Mussulmans. His reign was short, but glorious. 'After some internal troubles,' says Hallam, 'the Saracens won their way along the coast of Africa, as far as the pillars of Hercules, and a third province was irretrievably torn from the Greek empire. These Western conquests introduced them to fresh enemies, and ushered in more splendid successes. Encouraged by the disunion of the Visigoths [in Spain], and invited by treachery, Muza, the general of a master who sat beyond the opposite extremity of the Mediterranean Sea, passed over into Spain, and within about two years the name of Mohammed was invoked under the Pyrenees.'

Nineteen caliphs of the race of Omar succeeded Ali, and after these came the dynasty of the Abassydæ, descended by the male line from Mohammed. The second caliph of this race, named Almanzor, removed the seat of empire to Bagdad (762), and introduced learning and the culture of the sciences, which his successors continued to promote with zeal and liberality. This was some recompense for those indignities which had been cast upon literature by the brutal Omar. Perhaps the obligations of modern Europe to Arabia at this time have been overstated; but it is not to be denied that

learning, almost totally excluded and extinct in Europe during the eighth and ninth centuries, found an asylum here. It has been matter of dispute how the tastes of these fierce Arabians became thus first directed. They probably owed it to the Greeks; but it is certain that what they got they returned with interest. We are said to derive our present arithmetical figures from this strange people; and geometry, astronomy, and alchemy were their favourite pursuits. The graces of light literature were not neglected, as is shown by the One Thousand and One Nights' Entertainments, a production of this period, which still continues to solace the hours of childhood and old age among ourselves, and attests the extent of fancy and the variety of genius among those that gave it birth. Haroun al Raschid, who flourished in the beginning of the ninth century, is celebrated as a second Augustus. He was contemporary with Charlemagne, and communications of a friendly nature are said to have passed between them.

Within fifty years from the death of Mohammed, the Saracens had raised an empire, not only temporal, but also spiritual, more extensive and more powerful than what remained of the empire of Constantinople; and within a hundred, they had subdued not only Persia, Syria, Asia Minor, and Arabia, but also Egypt, North Africa, and Spain. It seemed, indeed, in the course of the eighth century, as if Asia and Europe both should yield to their victorious arms, and become one great Mohammedan dominion. But the mighty fabric, of mushroom growth, crumbled into dust with equal speed. After the first extension of their conquests, they ceased to acknowledge any one head of their empire, and the successful generals of the provinces contented themselves by paying a religious respect to the caliphs of Bagdat, as the successors of the prophet, while they retained the power of conquerors for themselves. In the year 732 they sustained a great defeat in France from Charles Martel, who became the father of an illustrious race of kings. No fewer than 375,000 Saracens are said to have been left dead on the field of this battle, and it is certain that they never after cherished the hope of subduing Europe. About the middle of the ninth century (848), they projected the conquest of Italy, and even laid siege to Rome itself. But they were entirely repulsed by Pope Leo IV.; their ships were dispersed by a storm, and their army cut to pieces. Spain was the only European country in which they were able to obtain a permanent footing, and in it alone have they left traces of their existence.

FROM THE DESTRUCTION OF ROME TO THE AGE OF CHARLEMAGNE—ORIGIN OF THE FEUDAL SYSTEM.

The Empire of the Cæsars fell in the West only by degrees, and the changes introduced by the northern tribes were gradual, though they proved great. Province after province yielded to the invaders; and before the end of the fifth century, every country in Europe had undergone extensive changes, and received fresh accessions to the number of its inhabitants. The Visigoths had seated themselves in Spain, the Franks in Gaul, the Saxons in the Roman provinces of South Britain, the Huns in Pannonia, and the Ostrogoths in Italy and the adjacent provinces. And not only had they been enabled to take up their abode, but in general they became masters, and changed the face of all that they touched: 'new governments, laws, languages; new manners, customs, dresses; new names of men and of countries, prevailed; and an almost total change took place in the state of Europe.' That change has been called a change from light to darkness, and it assuredly led to the extinction of that taste for literature and that regular administration of government which were the relieving features of the Roman despotism. But if it thus produced an immediate evil, it led to an ultimate good. The population was reinvigorated by the admixture of the new races, and from the fresh elements it had acquired there sprung institutions which might be considered as in many respects an improvement upon those that formerly prevailed.

It was out of these new circumstances that what has been called the Feudal System took its rise. This was a feature in society unknown in former ages. Hitherto men had been the slaves of individual masters, or, as in the more celebrated states of antiquity, they were bound together by the common tie of citizenship, and owed allegiance to none. Patriotism was their highest virtue, and all looked upon the state as a parent, to which, having got support from it, they were bound to give support in their turn. But in these times the rude inhabitants of the north had formed little or no conception of what a state was, and at first they were not prepared to relinquish their much-cherished individual freedom in exchange for rights which they thought they did not need. Changes at length came over them; and society gradually took new forms. Those who had led them on to battle, began to be looked upon as their guardians in peace. Victorious armies, cantoned out into the countries which they had seized, continued arranged under their officers, each of whom had a separate territory allotted to him, on which he could retain and support his immediate followers, while the principal leader had the largest; and in this way all were bound in allegiance, both to their immediate superiors and to their chief, and all were in readiness to be called out to arms whenever their services were thought to be required. This 'military chieftainship,' infusing itself as an element in the barbarian societies, was the first advance to anything like civil or social government since the extinction of the Roman power. Nations, indeed, were still far from having the advantage of a regular government. The method of conducting judicial proceedings, and of administering justice, was still peculiarly unsettled and uncertain. The authority of the magistrate was so limited, and the independence assumed by individuals so great, that they seldom admitted any umpire but the sword. It was then that trial by ordeal became universal, and men's guilt or innocence was thought to be proved by the capacity of their bodies to withstand the influences of red-hot iron or boiling water applied to them, or by their overcoming their accuser in single combat.

These observations are applicable, with scarcely any variation, to all the nations which settled in Europe during the fifth and sixth centuries. Speaking of this subject, Dr Robertson says—'Though the barbarous nations which framed it [the Feudal System], settled in their new territories at different times, came from different countries, spoke various languages, and were under the command of separate leaders, the feudal policy and laws were established, with little variation, in every kingdom of Europe. This amazing uniformity hath induced some authors to believe that all these nations, notwithstanding so many apparent circumstances of distinction, were originally the same people. But it may be ascribed, with greater probability, to the similar state of society and of manners to which they were accustomed in their native countries, and to the similar situation in which they found themselves on taking possession of their new domains.' We shall now offer a few remarks respecting them individually.

No people at this period exhibited a more energetic character than the Franks, a Teutonic race originally settled on the Lower Rhine and Weser, and who had acquired their name (freemen) while successfully resisting the Roman power in an earlier age. About the year 486, they were under the rule of Clovis, who achieved the conquest of Gaul by the defeat of the Roman governor, and afterwards added Burgundy and Aquitaine to his dominions—the former by marriage, and the latter by the forcible expulsion of the Visigoths. This may be considered as the foundation of the French monarchy. Clovis adopted the Christian faith, and caused his people to follow his example. It is remarkable that while in war he exercised unlimited power over his subjects, they shared with him the legislative authority, meeting annually in the Champs de Mars to suggest and deliberate upon public measures, in the

settlement of which the meanest soldier had equally a voice with his sovereign.

At the death of Clovis in 511, his four sons divided the kingdom, which was afterwards reunited, divided again, and again united, amidst scenes of tumult and bloodshed. The line of kings proceeding from Clovis (called Merovignian from his grandsire Meroveus) dwindled in time into utter insignificance, while the chief power was wielded by an important officer, called the Mayor of the Palace. Among the most remarkable of these was Pepin Heristal, Duke of Austrasia, who ruled France for thirty years with great wisdom and good policy. His son, Charles Martel, who succeeded to his power, distinguished himself by that great victory over the Saracens (A. D. 732), which checked their career in Europe.

An appeal by Pepin le Bref, the son of Charles Martel, to the pope of Rome, whose authority had by this time become great, ruled that he who had the power should also have the title of king, and this put an end to the reign of the descendants of Clovis (752). Pepin remunerated the pope for this service by turning his arms against the Lombards in Italy, some of whose dominions he conferred upon the Holy See; and these, it is said, were the first of the temporal possessions of the church. Pepin died (768), leaving two sons, Carloman and Charles, who succeeded him in the empire. Carloman died at an early period of life, but Charles (subsequently Charlemagne) survived to achieve for himself a fame far greater than that of any other individual during the middle ages, with perhaps the single exception of Mohammed. We shall proceed to speak of him and of his times, after making one or two observations on some other European countries.

Spain was among the earliest countries lost to the Roman Empire. From about the year 406, this country, in whole or in part, had been successively invaded and subdued by Suevi, Alans, Vandals, and Visigoths. The last-named people were in possession of the greater part of the country before the year 585, and erected a monarchy which existed till 712, when they were subdued by the Saracens or Moors. The Saracens made their descent on Spain from Africa, where Muza, a viceroy of the caliph of Bagdat, had already made extensive conquests. They easily overran Spain and vanquished Don Rodrigo, or Roderic, the last of the Gothic kings. Abdallah, son of Muza, married the widow of Roderic, and the two nations entered into union. Before the conclusion of the eighth century, Abdalrahman, one of the Moorish generals, had laid aside all temporal subjection to the caliph of Bagdat, and formed Spain into an independent kingdom. His residence was at Cordova, and this city became renowned as one of the most enlightened in Europe under several succeeding reigns. Those parts of Spain which were under the Moorish kings embraced also their religion. The northern provinces never owned their dominion.

Towards the conclusion of the sixth century, Italy was in the possession of the Longobeards, or Lombards, who continued masters of the greater part of it for two centuries. Of their rule, history has recorded little besides murders and confusion.

It was during this period that the Saxon Heptarchy was formed in Britain (see No. 59).

CHARLEMAGNE—THE NEW WESTERN EMPIRE.

By far the greatest character who appeared in Europe at this period was Charles, the son of Pepin le Bref, and known in history by the name of Charlemagne, or Charles the Great. 'In the course of a reign of forty-five years,' says Mr Tytler, 'Charlemagne extended the limits of his empire beyond the Danube, subdued Dacia, Dalmatia, and Istria, conquered and subjected all the barbarous tribes to the banks of the Vistula, made himself master of a great portion of Italy, and successfully encountered the arms of the Saracens, the Huns, the Bulgarians, and the Saxons. His war with the Saxons was of thirty years' duration; and their final conquest was not achieved without an inhuman waste of blood. At the request of the pope, and to discharge the obligations of his father Pepin to the holy see, Charlemagne, though allied by marriage to Desiderius, king of the Lombards, dispossessed that prince of all his dominions, and put a final period to the Lombard dominion in Italy (774).'

When Charlemagne made his first entry into Rome, he was crowned King of France and of the Lombards by Pope Adrian I.; and afterwards, on a second visit, he was consecrated Emperor of the West by the hands of Pope Leo III. (800). He probably attached some importance to these rites; but it is to be remarked that, as yet, the pontiff was not in the enjoyment of that high influence by which he afterwards could confer or withdraw sovereignty at his pleasure.

'It is probable,' continues the authority above quoted, 'that had Charlemagne chosen Rome for his residence and seat of government, and at his death transmitted to his successor an undivided dominion, that great but fallen empire might have once more been restored to lustre and respect; but Charlemagne had no fixed capital, and he divided, even in his lifetime, his dominions among his children (806).' Charlemagne died in the year 814, aged seventy-two. His last days were employed in consolidating, rather than extending, his empire, by the making of laws which have rendered his name famous, and his memory even blessed. 'Though engaged in so many wars,' says Dr Russell, 'Charlemagne was far from neglecting the arts of peace, the happiness of his subjects, or the cultivation of his own mind. Government, manners, religion, and letters, were his constant pursuits. He frequently convened the national assemblies for regulating the affairs both of church and state. In those assemblies he proposed such laws as he considered to be of public benefit, and allowed the same liberty to others; but of this liberty, indeed, it would have been difficult to deprive the French nobles, who had been accustomed, from the foundation of the monarchy, to share the legislation with their sovereign. His attention extended even to the most distant corners of his empire, and to all ranks of men. He manifested a particular regard for the common people, and studied their ease and advantage. The same love of mankind led him to repair and form public roads; to build bridges where necessary; to make rivers navigable for the purposes of commerce; and to project that grand canal which would have opened a communication between the German Ocean and the Black Sea, by uniting the Danube and the Rhine.' Amidst all his greatness, his personal habits were simple; his dress was of the plainest sort, and such even as to shame his own courtiers; his hours of study were set apart, and seldom omitted even in the busiest times of his life; his daughters were taught spinning and housewifery, and his sons trained by himself in all the accomplishments of the age. Charlemagne was fond of the company of learned men, and greatly encouraged their residence in his dominions. In this respect he resembled his contemporary Haroun al Raschid, so famous in Arabian history, and Alfred the Great, who appeared in England shortly after this period. Superior to all national prejudice, he elevated an Englishman named Alcuin to the head of his royal academy. He was zealous for the extension of Christianity; and one of the few blots upon his name arises from his having, in the spirit of his age, caused 4000 Saxon prisoners to be beheaded in one day, because they would not submit to be baptized. Charlemagne established schools in the cathedrals and principal abbeys, for the teaching of writing, arithmetic, grammar, logic, and music.

Of the sons of Charlemagne, Louis, the youngest, surnamed the *Débonnaire*, or gentle, was the only one who survived. He succeeded to all his father's dominions, except Italy, which fell into the hands of Bernard, a grandson of Charlemagne. Louis, deficient in vigour of character, was unable to hold together the great empire left to him by his father. Having, among the first acts of his reign, given large portions of it to

his children, the remainder of his life was spent in disgraceful quarrels with them; and after his death (840), the empire was formally divided—Lothaire, his eldest son, obtaining Lorraine and Provence; while Charles the Bald, a younger son, continued sovereign of the western parts of France; and Louis became king of Germany. Thus abruptly terminates the history of the second western empire.

FRANCE FROM THE TIME OF CHARLES THE BALD TO THE ELEVENTH CENTURY.

During the reign of Charles the Bald, France first suffered from the attacks of the Normans, a race of bold and needy adventurers from the north of Europe. Their plundering invasions were continued for upwards of seventy years; till at length (912) the French king was compelled to purchase their amity by yielding to Rollo their leader the country afterwards from them called Normandy, of which Rouen was the capital. The first successor of Charles the Bald with whose name history has associated anything worth remembering, was Charles, surnamed the Fat (885). He was the son of that Louis to whom Germany had been before assigned, and was thus enabled to bring that country and France for a short time once more under a single ruler. In the turbulence of the times Charles was soon deposed; and during the century which followed, France, so lately the centre of an empire little less than that of Rome in the days of its Cæsars, was split up into a multitude of independencies, by nobles who would own only a very slender subjection to the kings. Out of these nobles at last sprang Hugh Capet (987), who was enabled, on the death of Louis V., to place himself on the throne. He was already possessed of great property, and proved to be also a prince of much ability and penetration. He established the royal residence at Paris, which his predecessors had deserted, and became the founder of a family which, in one of its branches, occupied the throne of France till the overthrow of monarchy in 1848. He deserves to be mentioned with honour, as being among the first of European kings who trusted to prudence, counsel, and moderation, rather than force of arms, in effecting his purposes. On his death (996), in the fifty-seventh year of his age and the tenth of his reign, he was succeeded by his son Robert, who had all his father's equitable disposition without his vigour of character. He was subjected to a degree of tyranny on the part of the church of which perhaps the history of the world does not afford such another example. Robert had been guilty of marrying a cousin in the fourth degree without a *dispensation* from the Holy See—that is, without paying a fine for what was only an imaginary offence. Gregory V., who then occupied the pontificial chair, threatened to excommunicate Robert if he should not dismiss his wife, and, on Robert's refusal, actually did so, and laid all his dominions under an interdict. This punishment proved tremendous in its effects; for though the king himself showed sense and courage enough to despise the wrath of the pontiff, yet his subjects deserted him in terror. The priests, in consequence of the interdict, refused sacrament to the sick all over the country, and the dead were everywhere left unburied, when mass was no longer said. In these circumstances the unfortunate king submitted. A second marriage, contracted with the consent of the church, proved very unhappy. The new queen, Constantia, or Constance, made many efforts to embroil her husband and his family, and in the midst of these Robert died (1031). His son Henry succeeded, and it was during his reign that those pilgrimages to the Holy Land, which were so soon to end in the Crusades, took their rise. Of these we shall speak by themselves. In the meantime we take leave of France by mentioning that Henry's successor was Philip (1060), whose reign is remarkable as having witnessed the beginning of those contests with England which continued at intervals till the early part of the nineteenth century.

At this period (1066) the Normans invaded and conquered England, where their leader, William, Duke of Normandy, became—as detailed in a subsequent number—the founder of an important dynasty.

THE GERMAN EMPIRE TILL THE ELEVENTH CENTURY.

Germany had no political existence till the time of Charlemagne, when it was formed by him into a part of the western empire. Towards the conclusion of the ninth century it became an empire of itself. In the year 887, Arnold, a natural son of Carloman, and nephew of Charles the Fat, was declared emperor by an assembly of bishops and nobles. These assemblies in Germany always retained a voice in the election of their emperors; and though they often made their choice from the line of succession, they never acknowledged any hereditary rights whatever. After the death of Arnold's son, called Louis III., their choice fell upon Conrad, Duke of Franconia (912). Conrad's successor was Henry I., surnamed the *Fowler*. He was a prince of great abilities, and introduced order and good government into the empire. 'He united the grandees and curbed their usurpations; built, embellished, and fortified cities; and enforced with great rigour the execution of the laws in the repression of all enormities. He had been consecrated by his own bishops, and maintained no correspondence with the see of Rome. His son, Otho the Great, who succeeded him (938), united Italy to the Empire, and kept the popedom in complete subjection. He made Denmark tributary to the imperial crown, annexed the crown of Bohemia to his own dominions, and seemed to aim at a paramount authority over all the sovereigns of Europe.'

In these times the papacy was much disordered. 'Formosus, twice excommunicated by Pope John VIII., had himself arrived at the triple crown. On his death, his rival, Pope Stephen VII., caused his body to be dug out of the grave, and after trial for his crimes, condemned it to be flung into the Tiber. The friends of Formosus fished up the corpse, and had interest to procure the deposition of Stephen, who was strangled in prison. A succeeding pope, Sergius III., again dug up the ill-fated carcase, and once more threw it into the river. Two infamous women, Marosia and Theodora, managed the popedom for many years, and filled the chair of St Peter with their own gallants or their adulterous offspring.'—*Tytler*. It was amidst this confusion and these disturbances that Otho was induced to turn his arms on Italy. He shortly became master of it all, and had himself declared emperor by the Holy See, with all the pomp that had attended the same ceremony to Charlemagne (962). Pope John XII., whom Otho had been the means of raising to the pontificial chair, rebelled soon after. Otho returned to Rome in fury, had John deposed, hanged one-half of the senate before he left the city, and wrung a solemn acknowledgment from an assembly of reluctant bishops, that the emperor had a right not only to nominate to vacant bishoprics, but also to elect the pope himself. Otho died (972), and was followed in succession by Otho II., Otho III., St Henry, Conrad II., and Henry III., the history of whose reigns exhibits nothing instructive, or upon which the mind can rest with pleasure. Henry IV. (1056) was a distinguished victim of papal tyranny. The celebrated Hildebrand, known as Gregory VII., was in this age the means of raising the power of the church to a height which it had never reached before. During Henry's contest with this daring and ambitious pontiff, he made him twice his prisoner, and twice did the thunders of the Vatican excommunicate and depose him in consequence. As a specimen of the power and insolence of this pope, we may mention that Henry, dispirited by the effect which his excommunication had upon his friends and followers, having resolved to go to Rome and ask absolution from Gregory in person, did so; and presenting himself as a humble penitent at the palace of St Peter, was there stripped of his robes, and obliged to remain in that condition, in an outer court, in the month of January (1077), barefooted, among snow, and fasting, for three successive days,

before he was allowed to implore forgiveness for his offences! On the fourth day he was permitted to kiss the toe of his holiness, and then received absolution! Henry died in 1106.

ITALY FROM THE NINTH TO THE ELEVENTH CENTURY.

The state of Italy during this period has been already partially noticed in the preceding section. From the time of Lothaire, to whom it was nominally assigned as a separate kingdom (843), to that of Otho the Great (964), the country was ravaged by contending tyrants. Between the invasions of the Normans on the one hand, and the claims of the German emperors on the other, it became much distracted, and was ultimately split up into several independent states. Some of these, particularly Venice, Genoa, Pisa, and Florence, became afterwards independent and powerful republics. It was during this period that the foundation of the temporal power of the popes was laid.

SPAIN FROM THE TIME OF ABDALRAHMAN TILL THE ELEVENTH CENTURY.

During the period of which we have been treating, Spain seemed less a part of Europe than any other country in it. The greater part of it still continued under the dominion of the Moors, and apparently with advantage. 'This period,' says Mr Tytler, 'from the middle of the eighth to the middle of the tenth century, is a most brilliant era of Arabian magnificence. Whilst Haroun al Raschid made Bagdat illustrious by the splendour of the arts and sciences, the Moors of Cordova vied with their brethren of Asia in the same honourable pursuits, and were undoubtedly at this period the most enlightened of the states in Europe. Under a series of able princes, they gained the highest reputation, both in arts and arms, of all the nations of the West.' And yet these Eastern conquerors seem to have had their troubles as well as others. A race of powerful nobles among them, as in the other countries of Europe, distracted the country, and made effective government impossible. The Christian part of the population, still possessed of several provinces in the north, might have taken advantage of such a state of things for repossessing themselves of their lost country; but civil dissension was still greater among themselves; and Christian princes readily formed alliances with the Moors, if they saw a prospect of weakening an immediate enemy by that means, forgetting that the common foe still remained to harass them. But the detail of these numerous and petty contentions need not detain us longer; nor does the history of Spain assume any importance till towards the conclusion of the fifteenth century, when the united arms of Ferdinand and Isabella expelled the Moors for ever from the country.

GENERAL STATE OF EUROPE IN THE ELEVENTH CENTURY.

Before the end of the tenth century, Europe had reached a point of darkness and degradation beyond which it seemed impossible to go. Though long nominally converted to the Christian religion, the nations of Europe may be said to have scarcely exhibited, up to this period, a single distinctive mark of what men understand by Christian civilisation. 'The barbarous nations,' says Dr Robertson, 'when converted to Christianity, changed the object, not the spirit of their religious worship. They endeavoured to conciliate the favour of the true God by means not unlike to those which they had employed in order to appease their false deities. Instead of aspiring to sanctity and virtue, which alone can render men acceptable to the great Author of order and of excellence, they imagined that they satisfied every obligation of duty by a scrupulous observance of external ceremonies. Religion, according to their conception of it, comprehended nothing else; and the rites by which they persuaded themselves that they should gain the favour of Heaven, were of such a nature as might have been expected from the rude ideas of the ages which devised and introduced them. They were either so unmeaning as to be altogether unworthy of the Being to whose honour they were consecrated, or so absurd as to be a disgrace to reason and humanity. Charlemagne in France, and Alfred the Great in England, endeavoured to dispel this darkness, and gave their subjects a short glimpse of light and knowledge. But the ignorance of the age was too powerful for their efforts and institutions. The darkness returned, and settled over Europe more thick and heavy than before.' The clergy were the only body of men among whom any knowledge or learning now remained; and this superiority they employed to continue, if not to deepen, the degradation into which society had fallen. The superstitious belief that moral crimes could be expiated by presents to the Deity, if not originated by them, at least found them its strenuous defenders, for the reason that a gift to God meant, in plainer language, a *solatium* to the church. The priests would have made men believe that avarice was the first attribute of the Deity, and that the saints made a traffic of their influence with Heaven. Hence Clovis is said to have jocularly remarked, that 'though St Martin served his friends very well, he also made them pay well for his trouble.'

Persons in the highest ranks and most exalted stations could neither read nor write. Of the clergy themselves, many of them did not understand the Breviary which it was their duty to recite; and some of them, it is asserted, could scarcely read it. Those among the laity who had to express their assent in writing, did so by a sign of the cross attached to the document (sometimes also by a seal); and to this day, in consequence, we speak of *signing* a document when we subscribe our names.

The evils of the feudal system, too, had by this time become excessive and insupportable. Every petty chief was a king in his own dominions, and his vassals were his subjects, if indeed they should not be called slaves. These barons made laws of their own, held courts of their own, coined money in their own names, and levied war at their own pleasure against their enemies; and these enemies were not unfrequently their kings. Indeed the kings of these times can be looked upon in no other light than as superior lords, receiving a nominal and empty homage for lands which, in the fictitious language of feudal law, were said to be held of the crown. In these circumstances, what might we expect to be the condition of the great body of the people? They were either actual slaves, or exposed to so many miseries, arising from pillage and oppression, that many of them made a voluntary surrender of their liberty in exchange for bread and protection from the feudal lords. There *was* no people, as that term is now understood. 'There was nothing morally in common,' says Guizot, 'between the lord and the serfs; they formed part of his domains, and were his property; under which designation were comprised all the rights that we at present call rights of public sovereignty, as well as the privileges of private property; he having the right of giving laws, of imposing taxes, and of inflicting punishment, as well as that of disposing and selling. In fact, as between the lord and the labourers on his domain, there were no recognised laws, no guarantees, no society, at least so far as may be predicated of any state in which men are brought into contact.' In what way society rose above so many accumulated evils, and light sprang from so much darkness, we shall now endeavour to show. The most remarkable and the most lasting influence, beyond all question, was that exerted by

THE CRUSADES.

'It is natural to the human mind,' says Dr Robertson, 'to view those places which have been distinguished by being the residence of any celebrated personage, or the scene of any great transaction, with some degree of delight and veneration. To this principle must be ascribed the superstitious devotion with which Christians, from the earliest ages of the church, were accustomed to visit that country which the Almighty had

selected as the inheritance of his favourite people, and in which the Son of God had accomplished the redemption of mankind. As this distant pilgrimage could not be performed without considerable expense, fatigue, and danger, it appeared the more meritorious, and came to be considered as an expiation for almost every crime. An opinion which spread with rapidity over Europe about the close of the tenth and beginning of the eleventh century, and which gained universal credit, wonderfully augmented the number of credulous pilgrims, and increased the ardour with which they undertook this useless voyage. The thousand years mentioned by St John [Rev. xx. 2, 3, 4] were supposed to be accomplished, and the end of the world to be at hand. A general consternation seized mankind; many relinquished their possessions, and, abandoning their friends and families, hurried with precipitation to the Holy Land, where they imagined that Christ would quickly appear to judge the world.*

While Palestine continued subject to the caliphs, they had encouraged the resort of pilgrims to Jerusalem, and considered this as a beneficial species of commerce, which brought into their dominions gold and silver, and carried nothing out of them but relics and consecrated trinkets. But the Turks having conquered Syria about the middle of the eleventh century, pilgrims were exposed to outrages of every kind from these fierce barbarians. This change happening precisely at the juncture when the panic terror which I have mentioned rendered pilgrimages most frequent, filled Europe with alarm and indignation. Every person who returned from Palestine related the dangers which he had encountered in visiting the holy city, and described with exaggeration the cruelty and vexations of the infidel Turks.'

Among the most notorious of those who had returned with these accounts, was a monk known by the name of Peter the Hermit. By all accounts this individual seems to have been a weak-minded and contemptible being. He is represented as running from city to city, and from kingdom to kingdom, bareheaded, with naked arms and legs, and bearing aloft a ponderous crucifix in his hand, imploring and preaching with an enthusiastic madness on the necessity of wresting the Holy Land from the hands of the infidels. In a more enlightened age, Peter the Hermit would probably have been confined as a troublesome lunatic; in this, however, he was not only allowed to go on, but encouraged and abetted in his career. The ambitious Hildebrande had expressed a strong desire to send armed forces from Europe to exterminate the Mohammedans from Palestine, in order that another country might be brought under his spiritual subjection; and Urban II., who at this time occupied the chair of St Peter, warmly seconded the efforts of the enthusiastic monk. Nor was Peter's success small. Vast multitudes proclaimed themselves ready to engage in the undertaking. Two great councils of the church, one of them held at Placentia, and the other at Clermont, in Auvergne, attended by prelates, princes, and immense multitudes of the common people, declared enthusiastically for the war (1095). The pope himself attended at the last, and Peter and he having both addressed the multitude, they all exclaimed, as if impelled by an immediate inspiration, 'It is the will of God! it is the will of God!' These words were thought so remarkable, that they were afterwards employed as the motto on the sacred standard, and came to be looked upon as the signal of battle and of rendezvous in all the future exploits of the champions of the cross. Persons of all ranks now flew to arms with the utmost ardour. The remission of penance, the dispensation from those practices which superstition imposed or suspended at pleasure, the absolution of all sins, and the assurance of eternal felicity, were the rewards held out by the church to all who joined the enterprise; and 'to the more vulgar class,' says Mr Hallam, 'were held out inducements which, though absorbed in the overruling fanaticism of the first Crusade, might be exceedingly efficacious when it began to flag. During the time that a Crusader bore the cross, he was free from suits for his debts, and the interest of them was entirely abolished; he was exempted, in some instances at least, from taxes, and placed under the protection of the church, so that he could not be impleaded in any civil court, except in criminal charges or questions relating to land.'

It was in the spring of the year 1096 that Peter set out for Judea, at the head of a promiscuous assemblage of 80,000 men, with sandals on his feet, a rope about his waist, and every other mark of monkish austerity. Soon after, a more numerous and better disciplined force of 200,000 followed, including some able and experienced leaders. Godfrey of Bouillon, Robert, Duke of Normandy (son of William the Conqueror of England), the Counts of Vermendois, Toulouse, and Blois, are a few of the more illustrious. The progress of this immense mass of human beings on their journey was marked by misery and famine. They had vainly trusted to Heaven for a supernatural supply of their wants, and in their disappointment they plundered all that came in their way. 'So many crimes and so much misery,' says Mr Hallam, 'have seldom been accumulated in so short a space, as in the three years of the first expedition;' and another historian says, that a 'fresh supply of German and Italian vagabonds,' received on the way, were even guilty of pillaging the churches. It is certain that before the hermit reached Constantinople, the number of his forces had dwindled down to 20,000. Alexis Comnenus, then emperor of Constantinople, who had applied to the states of Europe for assistance, without much hope of obtaining it, in order that he might be enabled to resist a threatened attack by the Turks upon himself, was surprised and terrified at the motley group of adventurers who had now reached the shore of his dominions. He readily afforded them the means of transporting themselves across the Bosphorus, and performed the same friendly office to the larger force which followed under Godfrey and others; glad, apparently, to have the barbarians of the north, as his subjects called them, out of his dominions. The Sultan Solyman met the army of the hermit, if army it could be called, and cut the greater part of it to pieces on the plains of Nicea. The second host proved more successful. In spite of their want of discipline, their ignorance of the country, the scarcity of provisions, and the excess of fatigue, their zeal, their bravery, and their irresistible force, enabled them twice to overthrow old Solyman, to take his capital Nice, and after an obstinate resistance, the city of Antioch also (1098). At length (1099) they reached Jerusalem, much diminished in numbers, and broken in spirit; but with persevering assiduity they proceeded to lay siege to the city, and in six weeks they became its masters. Their cruel conduct to the inhabitants attests the barbarous feelings of their hearts. 'Neither arms defended the valiant, nor submission the timorous; no age nor sex was spared; infants on the breast were pierced by the same blow with their mothers, who implored for mercy; even a multitude of ten thousand persons, who had surrendered themselves prisoners and were promised quarter, were butchered in cold blood by these ferocious conquerors. The streets of Jerusalem were covered with dead bodies. The triumphant warriors, after every enemy was subdued and slaughtered, turned themselves, with the sentiments of humiliation and contrition, towards the holy sepulchre. They threw aside their arms, still streaming with blood; they advanced with reclined bodies and naked feet and heads to that sacred monument; they sung anthems to Him who had purchased their salvation by His death and agony; and their devotion, enlivened by the presence of the place where He had suffered, so overcame their fury, that they dissolved in tears, and bore the appear-

* Mr Hallam mentions, as corroborative of this general belief, that charters at this period usually commenced with these words: 'As the world is now drawing to its close;' and that an army, marching under the Emperor Otho I., was so terrified by an eclipse of the sun, which it conceived to announce this consummation, as to disperse hastily on all sides.

ance of every soft and tender sentiment. So inconsistent is human nature with itself, and so easily does the most effeminate superstition ally both with the most heroic courage and with the fiercest barbarity!'

With a becoming foresight, the Crusaders established a Christian kingdom in the heart of Palestine; and at the head of it, by universal consent, was placed Godfrey, whose goodness and justice had signalised him, and gained him respect in the midst of the general wickedness. The pope, however, was too eager to enjoy the triumph to which he had looked forward, and sending an ignorant and obtruding ecclesiastic to assume this command, Godfrey retired; and thus was lost undoubtedly the best chance that Europeans ever had of really possessing the Holy Land. The Turks had now time to recover their strength and renew their attacks: they did so: many of the Crusaders had in the meantime returned home, and those of them who remained, surrounded and menaced by such foes, at last implored aid from Christendom. There the spirit which had been raised by Peter the Hermit was far from being extinguished; and another, more eloquent and more learned than Peter—namely, St Bernard—had arisen to keep alive the flame of devotion. Roused by his preachings, Europe sent forth a second Crusade (1147). It consisted of 200,000 French, Germans, and English, in two divisions, the first led on by Conrad III. of Germany, and the second by Louis VII. of France. Strangely enough, both these leaders permitted themselves to be drawn into a snare by false guides, furnished by the Greek emperor; and both armies, one after another, were withdrawn amidst the rocks of Laodicea, and after being nearly starved by famine, they were cut to pieces by the Sultan of Iconium. This Crusade proved the most disastrous of them all. 'Thousands of ruined families,' says Russell, 'exclaimed against St Bernard for his deluding prophecies: he excused himself by the example of Moses, who, like him, he said, had promised to conduct the Israelites into a happy country, and yet saw the first generation perish in the desert.'

It was shortly after this period that the illustrious Saladin appeared (1180). Born among an obscure Turkish tribe, this individual fixed himself by his bravery and conduct on the throne of Egypt, and began to extend his conquests in the East. The still existing, though wretchedly-supported kingdom of the Christians in Palestine, proving an obstacle to the progress of his arms, Saladin directed his power against it, and assisted by the treachery of the Count of Tripoli, he completely overcame the Christians in battle (1187). The holy city itself fell into his hands after a feeble resistance; and except some cities on the coast, nothing remained to the Christians of all that, a century before, it had cost Europe so much to acquire. The followers of the cross, however, were not yet wholly disheartened; and a third great Crusade was entered into before the end of the twelfth century.

The three greatest sovereigns of Europe—Frederick Barbarossa of Germany, Philip Augustus of France, and Richard Cœur de Lion of England—all took part in the scheme. The forces of Frederick were earliest in the field. He had passed through the unfriendly territories of the Greek empire, crossed the Hellespont, and defeated the infidels in several battles, before Richard or Philip had stirred from home. The Christians of the East were beginning to look with hope and pride on so great assistance; but they seemed fated to be unfortunate. Frederick died (1190) from having thrown his body, heated by exertion, into the cold river of Cydnus; and his army, like the others that had gone before it, dwindled into nothing. The united armies of Richard and Philip followed. In their progress, the feelings of envy and national hatred rose above the object which had brought them together. Philip returned, disgusted or dismayed, shortly after they reached their destination; and Richard was thus left alone to uphold the glory of European arms. He did it nobly. With a mixed army of French, German, and English soldiers, amounting in all to 30,000, Richard performed feats of valour which have not been surpassed in the history of any time or nation. On the plains of Ascalon, a tremendous battle was fought with Saladin, and that brave and great man was defeated, and 40,000 of his soldiers are said to have been left dead upon the field of battle. But the conquest was unavailing, and the followers of Richard began to fear that there would be no end to their struggles. The zeal which had brought so many of them from their homes, and sustained them so long in absence, at last abated. Saladin readily concluded a treaty by which Christians might still be permitted to visit the tomb of Christ unmolested, and Richard left the Holy Land for ever. It is due to the memory of Saladin (who did not long survive this period) to state that, after he made himself master of Jerusalem, he never molested the Christians in their devotions—a circumstance which, by contrast, reflects infinite disgrace on the cruel barbarities of the first Crusaders. In his last will he ordered alms to be distributed among the poor, without distinction of Jew, Christian, or Mohammedan; intending by this bequest to intimate that all men are brethren, and that when we would assist them, we ought not to inquire what they believe, but what they feel—an admirable lesson to Christians, though from a Mohammedan. But the advantages in science, in moderation, and humanity, seem at this period to have been all on the side of the Saracens.

There were no more great Crusades. Considerable bands of private adventurers still continued to move eastward; but disaster and disgrace attended every effort, and Europe at last became disheartened when the bones of two millions of her sons lay whitened on the plains of Asia, and so little had been accomplished. Nevertheless, in the year 1202, Baldwin, Count of Flanders, was able to raise another considerable army for the rescue of the Holy Sepulchre; but having reached Constantinople at a time when there was a dispute in the succession to the throne, he readily laid aside the project of the Crusade, took part in the quarrel, and in the course of five months he was himself the emperor. The citizens of Venice in Italy, who had lent their vessels for this enterprise, shared in the triumphs of the piratical Crusaders: they obtained the Isle of Candia, or Crete. Baldwin, however, was soon driven from the throne, and murdered; though the Latins, as his successors from the West were called, kept possession of Constantinople for fifty-seven years.

At this period (1227) a great revolution took place in Asia. Ghenghis Khan, at the head of a body of Tartars, broke down from the north upon Persia and Syria, and massacred indiscriminately Turks, Jews, and Christians, who opposed them. The European settlements in Palestine must soon have yielded to these invaders, had not their fate been for a while retarded by the last attempt at a Crusade under Louis IX. of France. This prince, summoned, as he believed, by Heaven, after four years' preparation set out for the Holy Land with his queen, his three brothers, and all the knights of France (1248). His army began their enterprise, and we may say ended it also, by an unsuccessful attack on Egypt. The king went home, and reigned prosperously and wisely for thirteen years; but the same frenzy again taking possession of him, he embarked on a Crusade against the Moors in Africa, where his army was destroyed by a pestilence, and he himself became its victim (1270).

Before the end of the thirteenth century (1291) the Christians were driven out of all their Asiatic possessions. 'The only common enterprise,' says Robertson, 'in which the European nations were engaged, and which they all undertook with equal ardour, remains a singular monument of human folly.'

INSTITUTION OF CHIVALRY—STATE OF EUROPE DURING AND AFTER THE CRUSADES.

Among the most remarkable institutions of the middle ages was that of Chivalry. The institution was certainly not the result of caprice, nor a source of

unmixed extravagance, as it has been represented, but an effort of human nature to express its feelings of love, honour, and benevolence, at a time when the spirit of liberty was extinguished, and religion had become debased. The feudal state was a state of perpetual war, rapine, and anarchy, during which the weak and unarmed were often exposed to injuries. Public protective law scarcely had an existence; and in these circumstances assistance came oftenest and most effectually from the arms of private friends. It was the same feeling of courage, united to a strong sense of duty, which both gave rise to chivalry, and led such multitudes to join the Crusades. Chivalry existed before them, and it survived them. Those who devoted themselves to a life of chivalry were called knights, and sometimes knight-errants, in allusion to their habits of wandering from one country to another in search of helpless objects, which their generosity might find a pleasure in relieving and defending. Admission to the order of knighthood was long reckoned an honour of the highest sort; and to fulfil the vows which entrants took upon them might well be considered so. They were bound, 'by God, by St Michael, and St George,' to be loyal, brave, and hardy; to protect the innocent, to redress the injuries of the wronged; and, above all, to uphold and defend the characters of women. The institution of chivalry is sometimes thought to have thrown an air of ridiculousness upon everything connected with the softer sex, and some of the vagaries of knight-errantry gave sufficient countenance to such a supposition; but on the whole we are bound to rate its beneficial influences in elevating the female character high indeed, when we contrast the gross and grovelling situation held by the sex in former times with the high and virtuous emotions that we have learned to associate in modern times with the name of woman. If the whole of this effect is not to be ascribed to chivalry, not a little of it must certainly be so; nor do its beneficial effects end here. The feelings of honour, courtesy, and humanity, which distinguished it, spread themselves into other parts of conduct. War, in particular, was conducted with less ferocity, and humanity came to be deemed as necessary to an accomplished soldier as courage. The idea of a *gentleman* is wholly the production of chivalry; and during the twelfth, thirteenth, fourteenth, and fifteenth centuries, a sense of honour and a refinement of manners towards enemies sprung up, which have extended to modern times, and form a distinguishing feature of them.

The history of the Crusades has carried us over nearly two centuries of the history of Europe. But Europe might be said, almost without exaggeration, to have been then in Asia. It was certainly not the scene of any transaction of importance during all that period. The numerous quarrels, both public and private, which had before agitated the several countries, and had constituted all their history, gave way, by mutual consent, as well as by the orders of the church, to the one idea which then reigned supreme among them. Society was thus unconsciously the means of permitting some of those powerful and pacific principles to come into play, which were soon to give it a new destiny. The absence of so many great barons during the time of the Crusades, was a means of enabling the common people, who had hitherto lived as their slaves, to raise themselves in public standing and estimation; while the possessions of many of these barons, by sale or the death of their owners without heirs, reverted to the sovereigns. In this way the power of the people and of royalty advanced together, and both at the expense of the class of nobility. The people were not unwilling to exchange the mastery of inferiors for that of a superior; and the kings, on their part, looked on this rising power of the people with pleasure, as it offered a shield to protect them from the insolence of the nobles. In these circumstances boroughs began to flourish. This was a new element in the progress of civilisation. Men who had hitherto skulked in castles, and had sacrificed their liberties and their lives for bread and protection from isolated chiefs, now found that, by a union among themselves, they might secure bread by industry, and protection and liberty by mutual aid. Multitudes, therefore, forsook their feudal subservience to enjoy independent citizenship. Villeins, or labourers, joyfully escaped, to take their place on a footing of equality with freemen; and sovereigns found means to pass a law that, if a slave should take refuge in any of the new cities, and be allowed to remain there unclaimed for a twelvemonth, he had thereby become free, and was henceforth a member of the community. Another improvement which kings were able to introduce about this time was the gradual abolition of minor courts of justice, which barons had previously held in their several domains, and their getting public and universal law administered by judges of their own appointment. Even single combat, the practice most inveterately adhered to of any among the ancient nobles, became less frequent and less honourable. The more revolting and absurd features of it were wholly abolished, though the great absurdity, and indeed the great crime itself, cannot be said to have become totally extinct, even up to our own day, when we recollect that the barbarous practice of duelling is still permitted to exist.

The effect, however, produced by the Crusades, which proved greatest in its consequences, though perhaps it was the most unlooked for at the time, was the rise of commerce. The first of these expeditions had journeyed to Constantinople by land; but the sufferings were so great, that all the rest were induced to go by sea. The Italian cities of Venice, Genoa, and Pisa, furnished the vessels which conveyed them; and the sums of money obtained for the freight of so many and so great armies were immense. This, however, was but a small part of what the Italian citizens gained by the expeditions to the Holy Land. The Crusaders contracted with them for military stores and provisions; and any of the Asiatic possessions of value, which came temporarily into the hands of the Christians, became emporiums of commerce for them. The sweet reward of labour was thus first felt for ages in Europe. New arts were brought from the East, and many of those natural productions of the warmer climates were first introduced into the West, which have since afforded the materials of a lucrative and extended commerce. We will allude in a separate section to the brilliant career of several of the Italian Republics—(see p. 124).

In these views we represent the fairest side of the picture. There were yet many obstacles in the way of a complete and harmonious evolution of the principles of civilisation. But the elements all seemed now to have acquired existence, and time only was required to consolidate and strengthen them.

FROM THE CRUSADES TO THE MIDDLE OF THE FIFTEENTH CENTURY—RISE OF SOME NEW POWERS.

The most remarkable general feature of European society about the time of the Crusades was the papal influence. Between the pontiffs and the German emperors there was kept up a perpetual struggle for power; but for a long time the advantage was almost always with the popes. The treatment which some of the emperors received from them was extremely humiliating. Frederick Barbarossa was compelled to kiss the feet of his holiness, Alexander III., and to appease him by a large cession of territory, after having indignantly denied his supremacy, and refused the customary homage. Henry VI., while doing homage on his knees, had his imperial crown kicked off by Pope Celestinus, who, however, made some amends for this indignity by the gift of Naples and Sicily. Henry had expelled the Normans from these territories, which now became appendages of the German empire (1194). In the beginning of the thirteenth century, Pope Innocent III. was imagined to have permanently established the powers of the Holy See, and its right to confer the imperial crown; but this proved far from being the case. In the time of Frederick II., who succeeded Otho IV. (1212), the old contentions rose to more than the usual

heights, and two factions sprung up in Italy, known by the names of Guelphs and Ghibellines, the former maintaining the supremacy of the popes, and the latter that of the emperors. Frederick maintained the contest which now arose between himself and the popes with much spirit; but on his death (1250) the splendour of the empire was for a considerable time obscured. At length Rodolph of Hapsbourg, a Swiss baron, was elected emperor (1274). Rodolph became the founder of the House of Austria, and ruled with both vigour and moderation. His son Albert I. was the means of causing the inhabitants of Switzerland to assert and obtain their liberty, by his attempting to bind them in subjection to one of his children, and then using force to compel them. In the pass of Morgarten, a small army of four or five hundred of these brave mountaineers defeated an immense host of Austrians (1315). Sixty pitched battles, it is said, were fought between the contending parties; but the spirit of William Tell, who appeared at this time, and of his patriot countrymen, rose above all attempts to enslave them; and the Swiss cantons secured a freedom which their descendants enjoy to this day. The further history of Germany, for nearly a century, is not politically important. Disputes between the emperors and the papacy still continued, though the balance of advantage was now oftener against the church.

About the beginning of the fifteenth century, the great papal schism, as it has been called, took place. It arose from there being no fewer than three different claimants for the chair of St Peter—Gregory XII., who was owned pope by the Italian states; Benedict XIII., by France; and Alexander V., a native of Candia, by a number of the cardinals. This schism proved very hurtful to the authority of the church, though in that respect it benefited the interests of society, and contributed to open men's eyes. The appearance of John Huss at this time aided in producing that effect. Huss proclaimed the same opinions as the great English reformer Wickliffe. He was branded of course by the clergy as a heretic and propagator of sedition. The general council of the church, held at Constance (1414), concocted no fewer than thirty-nine articles in which Huss is said to have erred. Some of the points he denied having professed, and others he offered to support by argument; but his voice was drowned by the clamours of bigotry. His hair was cut in the form of a cross; upon his head was put a paper mitre, painted with the representation of three devils; and he was delivered over to the secular judge, who condemned both him and his writings to the flames. A similar fate shortly after befell his disciple, Jerome of Prague, who is said to have exhibited the eloquence of an apostle and the constancy of a martyr at the stake (1416). In revenge for these cruelties, the Hussites of Bohemia kept up a war with the empire for twenty years; and it was only after having their right to express their opinions acknowledged that they desisted. The great schism lasted for many years. A Neapolitan archbishop, named Bari, was elected and deposed by the resident cardinals at Rome within a few months. Boniface IX. and Innocent VI. were each temporarily his successors. The result of the lengthened dispute may be stated to be, that papal authority was greatly weakened; the government of the church was brought down among a class of ecclesiastics that had never before tasted the sweets of power; and future popes were obliged to resort to such questionable practices for the maintenance of their dignity, that men in general began to lose respect for their sanctity, and a foundation was laid for changes which it fell to the lot of Luther and others to effect.

The period which witnessed these transactions was remarkable for the continued wars between France and England. In the beginning of the twelfth century, the famous dispute for supremacy arose between Thomas-à-Becket, archbishop of Canterbury, and Henry II., which ended in the death of the prelate (1171), but in the triumph of his principles. The beginning of the thirteenth century is memorable in English history, having witnessed the granting of the Magna Charta by King John; and towards the conclusion of it appeared Edward I., whose name is associated with the first great attempts to subdue the Scots on the part of England. The bravery of Wallace and of others averted that calamity for ever. Wales was not so fortunate; and Ireland had already become a conquered province. The grandson of Edward I., named Edward III., proved himself as ambitious and as sagacious as his predecessor. His attention, however, was greatly diverted from the kingdom of Scotland to that of France, with which country he commenced a war, that proved greater in duration and extent than any that had occurred in Europe since the fall of the Roman Empire. The proposal of subduing so great a country as France, and seating himself upon the throne of it, seemed at first to be the proposal of a madman; but in less than twenty years, Edward had so effectually dismembered the different provinces, alienating some of the nobility and overawing others, that his attaining the object of his desires seemed by that time no improbable nor distant reality. His son, known in history as Edward the Black Prince, named so from the colour of his armour, contributed much by his presence and his valour to the success of the English arms. In the battle of Cressy, fought in 1346, with numbers greatly on the side of France, and in that of Poictiers, fought ten years later, under similar circumstances, the English were completely victorious. John, king of France, was taken prisoner, and the conduct of young Edward to his fallen enemy was generous and delicate in the highest degree; so that the French prisoners are said to have been overcome by the display of such an elevation of mind on the part of their conqueror, and to have burst into tears. This refinement was the result of chivalry, which both the Edwards attached themselves to, and rendered respectable by their virtues.

France was at this time in a deplorable state. A foreign enemy in the heart of the kingdom, the king a prisoner, the capital in sedition, and civil war raging over and above all—these were some of her accumulated misfortunes; and as if nature meant to conspire with man for her destruction, a plague broke out at this time among the people, and consummated the work of famine and the sword. This plague, however, was not confined to France, though, from the dilapidated state of that country, it proved perhaps in it most disastrous. It invaded every kingdom of Europe, and the English historian, Hume, computes that it swept away about one-third of the inhabitants of every country that it attacked. The origin of the disease is not well known; but there can be no doubt that it could only have made the ravages which it did among nations uncivilised and ignorant, heedless of all the cleanliness and comforts which we know in modern times to be necessary to the preservation of health. According to the ordinary account, this pestilence took its rise in the Levant about the year 1346, from whence Italian traders brought it to Sicily, Pisa, and Genoa. In 1348 it passed the Alps, and spread over France and Spain. In the next year it reached Britain, where, in London alone, 50,000 persons are said to have become its victims; and in 1350, it laid waste Germany and other northern states, lasting generally in each country about five months. At Florence, more than three out of every five of the inhabitants were swept away. It is well known to those acquainted with Italian literature, that the time of Boccaccio's Decameron is laid during this pestilence.

While the plague lasted, a temporary truce had been agreed upon between the French and English. At that time the balance of advantage was greatly in favour of the English. Not to mention less important gains, all Guienne, Gascony, Poitou, Saintonge, the Limousin, and the Angoumois, as well as Calais, and the county of Pointhieu, were ceded in full sovereignty to Edward, and the empty title of King of France was all that he became bound to give up (1360). But it was found

impossible to retain possessions in the heart of a foreign country, though won by consummate bravery and ruled with no imprudence. In less than ten years (1368), the war was recommenced, and the English began to lose many of the provinces which they had previously acquired. Charles V., who had acted as regent in France during the captivity of his father John, and was now his successor on the throne, contributed greatly by his wisdom to this result; and his general, Du Guesclin, contributed not less to it by his valour. England had lost both its Edwards, and Richard II. proved destitute of abilities for leading on the enthusiasm of his countrymen to anything great. Charles died prematurely, however, a circumstance which proved unfortunate for France, as his son, the sixth of the same name, was a very unworthy successor. For forty years Charles VI. may be said to have borne the name of king, rather than to have reigned in France. The wealth accumulated by Charles the Wise was, in the first place, stolen by the Duke of Anjou; and afterwards, by reason of want of funds, and misapplication of what they had, Charles VI. and his ministers were fully more engaged in quarrels with the citizens of Paris and other subjects, than in any becoming efforts to expel the English. History records, however, that the king became totally imbecile in mind (1393), so that he was, by universal consent, excluded from all share in the government, and the Houses of Burgundy and Orleans long struggled for the regency. At this period Henry V. of England put in a claim for the government of the kingdom, on the strength of a distant relationship to the reigning family; and after having gained the memorable battle of Agincourt (1415), he was actually promised the throne on the death of Charles, though his own death prevented this from ever taking place. It may be worth remarking, that *cards* were invented in this age. The desire to amuse the silly king of France was the cause. In the year 1422, Charles VII., surnamed the Victorious, was crowned king of France at Poictiers, while the crown was claimed on the part of Henry VI. of England, yet an infant. The war continued, and the English were like to have proved victorious, when a simple maiden, named Joan of Arc, made her appearance at the head of the armies of France, and turned the tide of fortune in favour of her country. Apparently mistaking the impulses of superstition for Divine inspiration, she gave out that she had been commissioned by Heaven to save her country; and having succeeded in inspiring the French soldiery with that belief, she led them on to battle, and they proved victorious. It must be recorded, to the disgrace of our countrymen, that Joan, being shortly after taken prisoner, was condemned to be burnt as a sorceress. The French, however, were but the more exasperated at this; and their victory of Formigny, and the death of Talbot, perhaps the greatest English warrior of the age, now left them in possession of all their country, with the exception of Calais and Greignes (1450).

Of all that was done by England to obtain a footing in France, a barren title to our sovereigns alone is all that was preserved till a recent period. The power and spirit of the French nation rose above all calamities, and in less than half a century, having freed herself of every enemy at home, her arms were in a condition to be directed externally with effect. The invasion of Naples by Charles VIII. was the event that first engaged the principal states of Europe in relations of alliance or hostility, which may be deduced to the present day, and is the point which most appropriately terminates the history of the middle ages.

During this period, several of those countries in the north of Europe, which have made a considerable figure in modern history, for the first time attracted attention. The greatest of these was Russia. In the middle of the thirteenth century, the tribes of Tartary made a complete conquest of this country, and for about a hundred years they maintained their supremacy. At length Ivan ascended the throne of Moscow (1462), and overcoming the Tartars, established a kingdom of his own, and was able to form an alliance with the Emperor Maximilian of Germany, who did not hesitate to style him brother. This was the first entrance of Russia into European politics.

Before the end of the fourteenth century, the Christian religion had penetrated into Denmark, Sweden, Prussia, and Poland; but it failed in producing any immediate beneficial effect. The political events which took place in these countries, however, were very various at this period, but proved too unimportant in their results to admit of being even outlined here.

THE ITALIAN REPUBLICS—COMMERCE IN GENERAL.

Among the Italian cities, Venice, at the extremity of the Adriatic, Ravenna, at the south of the mouth of the Po, Genoa, at the foot of the Ligurian mountains, Pisa, towards the mouths of the Arno, Rome, Gaëta, Naples, Amalphi, and Bari, were either never conquered by the Lombards, or were in subjection too short a time to have lost many of their ancient habits and customs. In this way these cities naturally became the refuge of Roman civilisation, at a time when other parts of Europe were wading through barbarian darkness. The feudal system never prevailed among them with any force; and several of these and other cities had important privileges conferred upon them by the German emperors at a very early period. Sismondi, the historian of Italy, asserts that Otho I. (936) erected some of them into municipal communities, and permitted them the election of their own magistrates. It is certain that, in 991, the citizens of Milan rose in tumult, expelled an archbishop from their city, and were able to establish a qualified right to interfere in future elections. The after-history of Milan is eventful and tragical; but we can only give a short account of it here. In the middle of the twelfth century, Frederick Barbarossa became engaged with the cities of Lombardy, and particularly with it, in extensive and destructive wars. In the year 1162 Milan was finally overcome; the walls and houses were razed from their foundation, and the suffering inhabitants dispersed over other cities, obtaining sympathy in their distress, and communicating their enthusiastic love of freedom in return. The republican form of government was adopted in every considerable town; and before the end of the thirteenth century, there was a knowledge, a power, and an enterprise, among these apparently insignificant republics which all Europe could not match.

The beneficial though unlooked-for effect of the Crusades upon commerce has already been mentioned. During the twelfth and thirteenth centuries the commerce of Europe was almost entirely in the hands of the Italians, more commonly known in those ages by the name of Lombards. The republic of Pisa was one of the first to make known to the world the riches and power which a small state might acquire by the aid of commerce and liberty. Pisa had astonished the shores of the Mediterranean by the number of vessels and galleys that sailed under her flag, by the succour she had given the Crusaders, by the fear she had inspired at Constantinople, and by the conquest of Sardinia and the Balearic Isles. Immediately preceding this period, those great structures which still delight the eye of the traveller—the Dome, the Baptistry, the Leaning Tower, and the Campo Santo of Pisa had all been raised; and the great architects that spread over Europe in the thirteenth century had mostly their education here. But unfortunately, the ruin of this glorious little republic was soon to be accomplished. A growing envy had subsisted between it and Genoa during the last two centuries, and a new war broke out in 1282. It is difficult to comprehend how two simple cities could put to sea such prodigious fleets as those of Pisa and Genoa. Fleets of thirty, sixty-four, twenty-four, and one hundred and three galleys, were successively put to sea by Pisa, under the most skilful commanders; but on every occasion the Genoese were able to oppose them with superior fleets. In August 1284, the Pisans were defeated in a naval engagement before the Isle of

Meloria; thirty-five of their vessels were lost, five thousand persons perished in battle, and eleven thousand became prisoners of the Genoese. After a few further ineffectual struggles, Pisa lost its standing.

The greatest commercial, and altogether the most remarkable city of the Italian republics, was Venice. Secluded from the world, on a cluster of islands in the Adriatic, the inhabitants of this city had taken up their abode in the course of the fifth century, and they boasted themselves to have been independent of all the revolutions which Europe had been undergoing since the fall of the Roman Empire. This might be true to a great extent, though for long it was certainly more the result of their obscurity than their power. By the tenth century, however, the descendants of those fishermen that had first taken refuge here, were able to send fleets abroad which could encounter and overawe both Saracens and Normans. The Venetians had all along kept up a correspondence with Constantinople during the darkest periods of the middle ages. This was greatly renewed and extended about the time of the Crusades. When Constantinople was taken by the Latins (1204), the Venetians, under their doge, or chief magistrate, Henry Dandalo, became possessed of three-eighths of that great city and of the provinces, and Dandalo assumed the singularly accurate title of Duke of Three-Eighths of the Roman Empire. The Venetians greatly increased their share of the spoil by making advantageous purchases from the more needy of the Crusaders. Among the most important of these was the Isle of Candia, which they retained till the middle of the seventeenth century. The idea of a bank took its rise in this city, and an establishment of that nature, simply for the receipt of deposits, is said to have existed in it so soon as the year 1157. But it was not till about a century later that banking, as the term is now understood, began at all to be practised. The merchants of Lombardy and of the south of France began at that time to remit money by bills of exchange, and to make profit upon loans. The Italian clergy who had benefices beyond the Alps, found the new method of transmitting money exceedingly convenient; and the system of exacting usury or interest, after experiencing every obstruction from ignorance and bigotry, became a legal part of commerce. In the thirteenth century the government of Venice was entirely republican; but continued wars with Genoa reduced both cities. These wars were all conducted on the seas, and the display of naval strength on both sides seems prodigious, when we reflect on the poor condition of Italy at the present day. Besides these wars for objects of ambition, there were continual jealousies which rose above enlightened views of self-interest, and led to the most disgraceful broils. At the middle of the fourteenth century a battle took place between the rival citizens, in which the Genoese were defeated. Their loss was immense, and in distress and in revenge they gave themselves up to John Visconti, Lord of Milan, then the richest and among the most ambitious of the petty tyrants of Italy, hoping that he would give them the means to re-establish their fleet and continue the war with the Venetians. He did so, and in another naval engagement, fought in 1354, in the Gulf of Sapienza, the Venetians were entirely defeated. But the Genoese had sacrificed their liberty in their thirst for revenge. Visconti became their master instead of friend. Venice was able to rise above its temporary discomfiture, and during the fifteenth century its fame and power became greater than they had ever been before. In the beginning of the fifteenth century the Venetians captured the town of Padua, and gradually lost their empire of the sea while they acquired possessions on the continent.

Among the most famous of the Italian states at this period was Florence; and its fame was founded, not on arms, but on literature. Like the other Italian cities, however, it owed its first elevation to the commercial industry of its inhabitants. There was a curious division of the Florentine citizens, subsisting about the beginning of the thirteenth century, into companies or arts. These were at first twelve—seven called the greater arts, and five the lesser; but the latter were gradually increased to fourteen. The seven greater arts were those of lawyers and notaries, of dealers in foreign cloth (called sometimes *calimala*), of bankers or money-changers, of woollen-drapers, of physicians and druggists, of dealers in silk, and of furriers. The inferior arts were those of retailers of cloth, butchers, smiths, shoemakers, and builders. It was in the thirteenth century that Florence became a republic, and it maintained its independence for two hundred years. In the beginning of the fifteenth century it became peculiarly distinguished by the revival of Grecian literature and the cultivation of the fine arts. Cosmo de Medici, who lived a citizen of Florence at this time, and was known by the name of the Grand Duke of Tuscany—descended from a long line of ancestors, whose wealth had been honourably acquired in the prosecution of the *greater arts*—possessed more riches than any king in Europe, and laid out more money on works of learning, taste, and charity, than all the princes of his age. The same liberality and munificence distinguished his family for several generations.

The commercial success of the states of Italy induced the inhabitants of northern Europe to attempt similar enterprises. In the thirteenth century the seaports on the Baltic were trading with France and Britain, and with the Mediterranean. The commercial laws of Oleron and Wisbuy (on the Baltic) regulated for many ages the trade of Europe. To protect their trade from piracy, Lubec, Hamburg, and most of the northern seaports, joined in a confederacy, under certain general regulations, termed the *League of the Hanse Towns*; a union so beneficial in its nature, and so formidable in point of strength, as to have its alliance courted by the predominant powers of Europe. 'For the trade of the Hanse Towns with the southern kingdoms, Bruges on the coast of Flanders was found a convenient entrepôt, and thither the Mediterranean merchants brought the commodities of India and the Levant, to exchange for the produce and manufactures of the north. The Flemings now began to encourage trade and manufactures, which thence spread to the Brabanters; but their growth being checked by the impolitic sovereigns of those provinces, they found a more favourable field in England, which was destined thence to derive the great source of its national opulence.'

THE TURKS—FALL OF CONSTANTINOPLE.

We have already seen the weakness of the empire of Constantinople at the time of the Crusades; we have seen the city sacked and the government seized by the champions of the cross. The Greeks regained their empire in the year 1261, but in a mangled and impoverished condition. For nearly two centuries it continued in a similar state. Andronicus, son of Michael Palæologus, who had restored the Greek empire, allowed himself to be persuaded that, as God was his protector, all military force was unnecessary; and the superstitious Greeks, regardless of danger, employed themselves in disputing about the transfiguration of Jesus Christ, when their unfortunate situation made it necessary that they should have been studying the art of war, and training themselves to military discipline.

In the meantime, the Turks had become a powerful people. They had embraced the Mohammedan religion long before the time of the Crusades, and proved powerful obstacles to the success of those expeditions. About the beginning of the fourteenth century they established an empire of their own in Asia Minor, under Othman or Ottoman, and to this day the Ottoman Empire is a name given to the dominions of their descendants. By degrees they encroached on the borders of the empire of Constantinople, and they were only prevented from subverting it at a much earlier period than they did, by being called upon to defend themselves from the arms of an Eastern conqueror who arose at this time. Tamerlane, otherwise called Timerbek, was a prince of the Usbek Tartars, and a descendant from Ghenghis Khan.

After having overrun Persia, and a great part of India and Syria, this great conqueror was invited by some of the minor princes of Asia, who were suffering under the Ottoman tyranny, to come and protect them. Tamerlane was flattered by the request, and having brought a great army into Phrygia, he was there met by Bajazet, the Ottoman emperor, who readily gave battle, but was defeated and made prisoner (1402). Tamerlane made Samarcand the capital of his empire, and there received the homage of all the princes of the East. Illiterate himself, he was solicitous for the cultivation of literature and science in his dominions; and Samarcand became for a while the seat of learning, politeness, and the arts, but was destined to relapse after a short period into its ancient barbarism. The Turks, after the death of Tamerlane, resumed their purpose of destroying the empire of the East. The honour, or disgrace, as it may be thought, of effecting this, fell to the lot of Mohammed II., commonly surnamed the Great. At the early age of twenty-one, Mohammed projected this conquest. His countrymen had already passed into Europe; they had possessed themselves of the city of Adrianople, and indeed had left nothing of all the empire of the East to the Greeks but the city of Constantinople itself. The preparations made for defence were not such as became the descendants of Romans, and the powers of Europe now looked upon the East with the most supine indifference. The Turks assailed the city both on the land side and on that of the sea; and battering down its walls with their cannon, entered sword in hand, and massacred all who opposed them (1453). Mohammed, like many other ambitious conquerors, showed himself unwilling to destroy unnecessarily. The imperial edifices were preserved, and the churches were converted into mosques: the exercise of their religion was freely allowed to the Christians, and this privilege they have never been deprived of. Constantine (for that was the name of the last, as well as the first emperor of the East) was slain in battle. From the time that it was founded by Constantine the Great, the city had subsisted 1123 years. Mohammed liberally patronised the arts and sciences. He was himself not only a politician, but a scholar, and he invited both artists and men of letters to his capital from the kingdoms of Europe. But the taking of Constantinople had an effect contrary to his wishes: it dispersed the learned Greeks, or Greeks who were *called* learned, all over Europe; and this, among other things, may be looked upon as a help to the great revival of letters which the fifteenth century witnessed. The taking of Constantinople was followed by the conquest of Greece and Epirus; and Italy might probably have met with a similar fate, but for the fleet of the Venetians, who opposed the arms of Mohammed with considerable success, and even attacked him in Greece; but the contending powers soon after put an end to hostilities by a treaty. By this time Europe was trembling at Mohammed's success, and was afraid, not without reason, that he might pursue his conquests westwards. It was relieved from fear by his death, which took place in 1481. His descendants have continued to our own day to occupy one of the finest countries in Europe; and it was only in the present age that Greece was liberated from their dominion.

RISE OF CIVIL FREEDOM AND SOCIAL IMPROVEMENT.

Civil freedom, as we have seen, dawned first in the great commercial cities of Italy, whence it spread to Germany, Flanders, and Britain. This important change in society may be traced to the institution free communities of traders, or guilds of merchant. and such confederacies were a necessary consequence of the usurpation and tyranny of the nobles and feudal possessors of the soil. In the eleventh and twelfth centuries the usurpations of the nobility became intolerable; they had reduced the great body of the people to a state of actual servitude. Nor was such oppression the portion of those alone who dwelt in the country, and were employed in cultivating the estates of their masters. Cities and villages found it necessary to hold of some great lord, on whom they might depend for protection, and became no less subject to his arbitrary jurisdiction. The inhabitants were deprived of those rights which, in social life, are deemed most natural and inalienable. They could not dispose of the effects which their own industry had acquired, either by a later will, or by any deed executed during their lives. Neither could they marry, nor carry on lawsuits, without the consent of their lord. But as soon as the cities of Italy began to turn their attention towards commerce, and to conceive some idea of the advantages which they might derive from it, they became impatient to shake off the yoke of their insolent lords, and to establish among themselves such a free and equal government as would render property and industry secure. The Italian cities were the first to emancipate themselves, and their example was followed in other great seats of population, the king of the country in general countenancing the establishment of free communities, in order to gain support against the encroachments of the overgrown power of the barons. The first community of this description formed in Scotland is understood to have been that of Berwick-upon-Tweed, which received its charter from William the Lion. Towns, upon acquiring the right of community, became so many little republics, governed by known and equal laws. The inhabitants being trained to arms, and being surrounded by walls, they soon began to hold the neighbouring barons in contempt, and to withstand aggressions on their property and privileges. Another great good, of fully more importance, was produced. These free communities were speedily admitted, by their representatives, into the great council of the nation, whether distinguished by the name of a Parliament, a Diet, the Cortes, or the States-General. This is justly esteemed the greatest event in the history of mankind in modern times. Representatives from the English boroughs were first admitted into the great national council by the barons who took up arms against Henry III. in the year 1265; being summoned to add to the greater popularity of their party, and to strengthen the barrier against the encroachments of regal power. Readers may draw their own conclusions from an event which ultimately had the effect of revolutionising the framework of society, and of rearing that great body of the people commonly styled 'the middle class.'

The enfranchising of burghal communities led to the manumission of slaves. Hitherto the tillers of the ground, all the inferior classes of the country, were the bondsmen of the barons. The monarchs of France, in order to reduce the power of the nobles, set the example, by ordering (1315–1318) all serfs to be set at liberty on just and reasonable conditions. The edicts were carried into immediate execution within the royal domain. The example of their sovereigns, together with the expectation of considerable sums which they might raise by this expedient, led many of the nobles to set their dependents at liberty; and servitude was thus gradually abolished in almost every province of the kingdom. This beneficial practice similarly spread over the rest of Europe; and in England, as the spirit of liberty gained ground, the very name and idea of personal servitude, without any formal interposition of the legislature to prohibit it, was totally banished.

While society was assuming the semblance of the form it now bears, the progress of improvement was accelerated by various collateral circumstances, the first of which worth noticing was

The Revival of Letters. The first restorers of learning in Europe were the Arabians, who, in the course of their Asiatic conquests, became acquainted with some of the ancient Greek authors, discovered their merits, and had them translated into Arabic, esteeming those principally which treated of mathematics, physics, and metaphysics. They disseminated their knowledge in the course of their conquests, and founded schools and colleges in all the countries which they subdued. The

western kingdoms of Europe became first acquainted with the learning of the ancients through the medium of those Arabian translations. Charlemagne caused them to be retranslated into Latin; and, after the example of the caliphs, founded universities at Bonona, Pavia, Osnaburg, and Paris. Similar efforts were made in England by Alfred; and to him we owe the establishment, or at least the elevation, of the university of Oxford. The first efforts, however, at literary improvement were marred by the subtleties of scholastic divinity. Perhaps the greatest and wisest literary character of the middle ages was an English friar, named Roger Bacon. This extraordinary individual was not only learned, but, what was more uncommon in those times, he was scientific. Hallam asserts that he was acquainted with the nature of gunpowder, though he deemed it prudent to conceal his knowledge. He saw the insufficiency of school philosophy, and was the first to insist on experiment and the observation of nature as the fittest instruments by which to acquire knowledge. He reformed the calendar, and made discoveries in astronomy, optics, chemistry, medicine, and mechanics.

It is to Italy, however, that we owe the first and greatest exertions in the revival of letters. The spirit of liberty which had arisen among its republics was favourable to the cultivation of literature; and accordingly we find that not only did they produce many individuals who were most active and successful in bringing to light the relics of classical lore, but that there also arose among them men possessed of the highest order of original genius. Florence produced Dante so early as 1265. Dante was associated with the magistracy of his native city in his earlier years; but having given dissatisfaction in that capacity, he was banished, and in his exile produced his great poem entitled the 'Divine Comedy.' It is a representation of the three supposed kingdoms of futurity—Hell, Purgatory, and Paradise—divided into one hundred cantos, and containing about 14,000 lines. The poem has been much praised. Petrarch, born in the year 1304, was likewise a Florentine by birth. The misfortunes of his father had impoverished the family, and Petrarch was too proud to take the usual method of retrieving his affairs. His genius, however, earned for him the friendship of many Italian princes, and even of more popes than one, although he had exerted his talents to expose the vices of their courts. Petrarch's personal character seems to have exhibited some unamiable traits; but he has sung of love, friendship, glory, patriotism, and religion, in language of such sweetness and power as to have made him the admiration of every succeeding age. Boccaccio, like the two great poets named, was also a Florentine. He was born in 1313, and his name has descended to posterity less associated with his poetry than the light, elegant, and easy prose of his novels.

The discovery of Justinian's Laws, as detailed in the Pandects (see HISTORY OF LAWS), was another event which powerfully tended to modify the barbarism that prevailed during the middle ages in Europe.

The invention of the Mariner's Compass must be reckoned of still greater importance, and yet it is absolutely unknown to whom we owe it. That honour has been often bestowed on Gioia, a citizen of Amalphi, who lived about the commencement of the fourteenth century. But the polarity of the magnet at least was known to the Saracens two hundred years before that time; though even after the time of Gioia, it was long before the magnet was made use of as a guide in navigation. 'It is a singular circumstance,' says Mr Hallam, 'and only to be explained by the obstinacy with which men are apt to reject improvement, that the magnetic needle was not generally adopted in navigation till very long after the discovery of its properties, and even after their peculiar importance had been perceived. The writers of the thirteenth century, who mention the polarity of the needle, mention also its use in navigation; yet Campany has found no distinct proof of its employment till 1403, and does not believe that it was frequently on board Mediterranean ships at the latter part of the preceding age.' The Genoese, however, are known in the fourteenth century to have come out of that inland sea, and steered for Flanders and England. But by far the greatest sailors of the age were the Spaniards and Portuguese. This latter nation had little or no existence during the greater part of the middle ages, but in the twelfth, thirteenth, and fourteenth centuries, they were able to expel the Moors from a great part of their country; and in the beginning of the fifteenth, John, surnamed the Bastard, who was then their king, was the first European prince who exhibited a respectable navy. It was in 1486 that this adventurous people first doubled the Cape of Good Hope.

The discovery of America (1493) may be mentioned supplementarily to the invention of the mariner's compass, as an event which, without it, could never have taken place. The immortal honour of that discovery rests with Christopher Columbus, a sailor of Genoa. After unsuccessful applications at almost every court in Europe, and braving obloquy and contempt, Columbus at last obtained a miserable force from Ferdinand and Isabella of Spain; and with no landmark but the heavens, nor any guide but his compass, he launched boldly into the sea, and at last conducted Europeans to the great western hemisphere.

In the course of the fourteenth and beginning of the fifteenth centuries, various discoveries in the arts were made, which powerfully tended to the advancement of society; among these the more important were the invention of gunpowder and firearms, clocks and watches, paper-making and printing. This last, the greatest of all, prepared the way for the Reformation in religion, in the sixteenth century, by which religious was added to civil freedom, and a great spur given to individual activity.

Important as these events were in their ultimate tendencies, it is to be remembered that they did not immediately make any distinct change in the comforts of the people. In the latter centuries of the middle ages, the amusements of the common people were metrical and prose romances, unintelligible prophecies, and fables of giants and enchanters. The state of England and of France at this period shows the small advance which had been made towards those comforts and improvements which now exist. Even in the large cities, the houses were roofed with thatch, and had no chimneys. 'The two most essential improvements in architecture during this period,' says Mr Hallam, 'one of which had been missed by the sagacity of Greece and Rome, were chimneys and glass windows. Nothing apparently can be more simple than the former; yet the wisdom of ancient times had been content to let the smoke escape by an aperture in the centre of the roof; and a discovery, of which Vitruvius had not a glimpse, was made, perhaps in this country [England], by some forgotten semi-barbarian. About the middle of the fourteenth century the use of chimneys is distinctly mentioned in England and in Italy; but they are found in several of our castles which bear a much older date. This country seems to have lost very early the art of making glass, which was preserved in France, whence artificers were brought into England to furnish the windows of some new churches in the seventh century. It is said that, in the reign of Henry III., few ecclesiastical buildings had glazed windows. Suger, however, a century before, had adorned his great work, the Abbey of St Denis, with windows not only glazed but painted; and I presume that other churches of the same class, both in France and England, were generally decorated in a similar manner. Yet glass is said not to have been employed in the domestic architecture of France before the fourteenth century, and its introduction into England was probably by no means earlier. Nor, indeed, did it come into general use during the period of the middle ages. Glazed windows were considered as movable furniture, and probably bore a high price. When the Earls of Northumberland, as late as the reign of Elizabeth, left Alnwick

Castle, the windows were taken out of their frames and carefully laid by.'

By far the finest specimens of architecture which the middle ages produced were the religious edifices built in the twelfth and three following centuries. The superstition of the times was favourable to the production of works of that sort. To leave one's means for such a purpose was deemed so meritorious, as to entitle the donor to eternal happiness in the next scene of existence; and men in this world thought it a duty to render structures designed for purposes so sacred as beautiful and becoming as they could. It was about the middle of the twelfth century that what has been called the Gothic style of architecture took its rise, of which the peculiar feature is thought to be the pointed arch, formed by the segment of two intersecting semicircles, struck from points equidistant from the centre of a common diameter. This style of architecture has been said by different individuals to have originated in France, in Germany, in Italy, and in England (Vol. I. p. 438). The truth is, we neither know where it originated nor from what source it was derived. It has afforded antiquaries a curious subject of speculation how so perfect a system, as this has been thought, should not only have originated but reached perfection in times so dark. Any effectual explanation is probably now impossible; the knowledge of the art was never permitted to go beyond a fraternity of freemasons, and it is not to be supposed that the early archives of that association have survived so many revolutions.

The living even of the highest nobility under the Edwards was such as would not prove very palatable to their luxurious descendants. They drank little wine, had no foreign luxuries, rarely kept male servants except for husbandry, and still more rarely travelled beyond their native country. An income of £10 or £20 was reckoned a competent estate for a gentleman—at least the lord of a single manor would seldom have enjoyed more. A knight who possessed £150 a year passed for extremely rich. Sir John Fortescue speaks of five pounds a year as 'a fair living for a yeoman;' and we read that the same sum (£5) served as the annual expense of a scholar attending the university. Modern lawyers must be surprised at the following, which Mr Hallam extracts from the churchwarden's accounts of St Margaret, Westminster, for 1476:—'Also paid to Roger Fylpott, learned in the law, for his counsel giving, 3s. 8d., *with fourpence for his dinner*.'

It has been remarked that the wages of day-labourers, particularly those engaged in agriculture, were better in the times of Edward III. and Henry VI. than they have ever been at any other period of English history; nor can it be denied that this, upon the whole, is true. In the fourteenth century, a harvest man had fourpence a day, which enabled him in a week to buy a comb of wheat; but, says Sir John Cullum, in his History of Hawsted, to buy a comb of wheat a man must now (1784) work ten or twelve days. 'So,' says Mr Hallam, 'under Henry VI., if meat was at a farthing and a-half the pound, which, I suppose, was about the mark, a labourer earning threepence a day, or eighteenpence in the week, could buy a bushel of wheat at six shillings the quarter, and twenty-four pounds of meat, for his family. A labourer at present earning twelve shillings a week, can only buy a bushel of wheat at eighty shillings the quarter, and twelve pounds of meat at sevenpence.' It is thus undeniable that the day-labourers' wages could purchase greater quantities of certain kinds of food than the wages given to the same class of persons could do in the present day, but they wanted a thousand comforts which the meanest of our workmen now enjoy; and few surely would be willing to exchange all these blessings for the wars and miseries which Edward caused, even although they were insured, along with them, of daily supplies of beef and ale, of which the ancient yeomen boasted.

The internal accommodation of houses was even less than their outward splendour. A gentleman's house containing three or four beds was thought to be extraordinary well provided; few probably had more than two. The walls were commonly bare, without wainscot or even plaster, except that some great houses were furnished with hangings, and that perhaps hardly so soon as the reign of Edward VI. Neither books nor pictures could find a place in such dwellings as these. Some inventories of furniture, bearing dates in the fourteenth century, have been preserved to our own day, and they are curious and amusing. In Sir F. Eden's work on the State of the Poor, a carpenter's stock is said to have been valued, in the year 1301, at a shilling! In an inventory of the goods of 'John Port, late the king's servant,' who died about 1524, we find that this gentleman's house had consisted of a hall, parlour, buttery, and kitchen, with five bedsteads, two chambers, three garrets, and some minor accommodations. From this it may be inferred that Mr Port was a rather important man in his day, for very few individuals at that time could boast of such accommodation. His plate was valued at £94, his jewels at £23; and, strange to say, his funeral expenses amounted to £73, 6s. 8d!

Of all the arts necessary to existence, perhaps that of agriculture was in the most miserable condition during the middle ages. On a thousand spots of land which we now behold subjected to a fruitful cultivation, there was nothing to be seen at that time but 'tracts of forest ground, stagnating with bog or darkened by native woods, where the wild ox, the roe, the stag, and the wolf, had scarcely learned the supremacy of man.' We owe the first efforts at improvement in agriculture over the greater part of Europe to the monks. They chose, for the sake of retirement, secluded regions, which they cultivated with the labour of their hands. 'Of the Anglo-Saxon husbandry we may remark,' says Mr Turner, 'that Doom's-day Survey gives us some indication that the cultivation of the church lands was much superior to that of any other. They had much less wood upon them, and their meadow was more abundant, and in more numerous distributions.' The culture of arable land in general was very imperfect: according to Sir John Cullum, a full average crop on an acre sown with wheat amounted only to about nine or ten bushels—a circumstance, the knowledge of which may save us any surprise at a calculation by which it appears that, in the thirteenth century, the average annual rent of an acre of arable land was from sixpence to a shilling. In the time of Edward I., the ordinary price of a quarter of wheat appears to have been about four shillings. A sheep was sold high at a shilling, and an ox might be reckoned at ten or twelve. In considering these statements, however, of positive money values, it must be recollected by persons of this day that the precious metals were depreciated progressively in their value by every sovereign in Europe, who enabled themselves in this way to pay debts *in appearance*, while in reality they were cheating their creditors to that extent; and sums of small name in those days were every way equal in value to greater sums in our own.

At this time wine was sold only in the shops of the English apothecaries. Yet the progress of luxury, as it was called, had already begun to excite serious alarm. The parliament of Edward III. passed an act prohibiting the use of gold and silver in apparel to all who had not a hundred pounds a year; and Charles VI. of France ordained that none should presume to entertain their guests with more than two dishes and a mess of soup. It is almost unnecessary to add, that laws of that sort were passed only with a view to persons in the highest ranks; for others they were not needed. Contemporary history has recorded nothing of the poorer classes but their slaughter in war; but we are at little loss to perceive that domestic comforts must have been few and slender among them, when we know that neither chairs nor looking-glasses could be found in the bedrooms of the nobility. Ages over which this sketch does not extend, were required before the great mass of human beings should become possessed of personal comforts or of political rights.

HISTORY OF GREAT BRITAIN AND IRELAND.

CONQUEST BY THE ROMANS.

PREVIOUSLY to the year 55 before Christ, the British Islands, in common with the whole of northern and western Europe, were occupied by barbarous tribes, who bore nearly the same relation to the civilised nations of Greece and Italy, which the North American Indians of the present day bear to the inhabitants of Great Britain and the United States. The Romans, who for ages had been extending their power over their rude neighbours, had concluded the conquest of Gaul, now called France, when, in the year just mentioned, their celebrated commander, Julius Cæsar, learning from the merchants of that country that there was another fertile land on the opposite side of the narrow sea now termed the British Channel, resolved to proceed thither, and subject it also to the Roman arms. Disembarking at the place since called Deal, he soon overawed the savage natives, though they were naturally warlike, and averse to a foreign yoke. He did not, however, gain a firm footing in Britain till the succeeding year, when he employed no fewer than 800 vessels to convey his troops from Gaul. Except along the coasts, where some tillage prevailed, the British tribes lived exactly as the Indians now do, upon animals caught in hunting, and fruits which grew spontaneously. They stained and tattooed their bodies, and had no religion but a bloody idolatry called Druidism. The people of Ireland were in much the same condition.

Little was done on this occasion to establish the Roman power in Britain; but about a century afterwards—namely, in the year of Christ 43, when the Emperor Claudius was reigning at Rome—another large army invaded the island, and reduced a considerable part of it. A British prince called Caradoc, or Caractacus, who had made a noble defence against their arms, was finally taken and sent prisoner to Rome, where he was regarded with the same wonder as we should bestow upon a North American chief who had greatly obstructed the progress of our settlements in that quarter of the world. In the year 61, an officer named Suetonius did much to reduce the Britons, by destroying the numerous Druidical temples in the Isle of Anglesea; religion having in this case, as in many others since, been a great support to the patriotic cause. He soon after overthrew the celebrated British princess Boadicéa, who had raised an almost general insurrection against the Roman power.

In the year 79, Agricola, a still greater general, extended the influence of Rome to the Firths of Forth and Clyde, which he formed into a frontier, by connecting them with a chain of forts. It was his policy, after he had subdued part of the country, to render it permanently attached to Rome, by introducing the pleasures and luxuries of the capital. He was the first to sail round the island. In the year 84, having gone beyond the Forth, he was opposed by a great concourse of the rude inhabitants of the north, under a chief named Galgacus, whom he completely overthrew at *Mons Grampius*, or the Grampian Mountain; a spot about which there are many disputes, but which was probably at Ardoch in Perthshire, where there are still magnificent remains of a Roman camp. Tacitus, a writer related to Agricola, gives a very impressive account of this great conflict, and exhibits the bravery of the native forces as very remarkable; but the correctness of his details cannot be much relied on.

It appears that Agricola, while on the west coast of Scotland, was desirous of making the conquest of Ireland, which he thought would be useful, both as a medium of communication with Spain, and as a position whence he could overawe Britain. He formed an acquaintance with an Irish chief, who, having been driven from his country by civil commotions, was ready to join in invading it. By him Agricola was informed that the island might be conquered by one legion and a few auxiliaries. The inhabitants, according to Tacitus, bore a close resemblance to the Britons.

It is generally allowed that the Romans experienced an unusual degree of difficulty in subduing the Britons; and it is certain that they were baffled in all their attempts upon the northern part of Scotland, which was then called Caledonia. The utmost they could do with the inhabitants of that country, was to build walls across the island to keep them by themselves. The first wall was built in the year 121, by the Emperor Hadrian, between Newcastle and the Solway Firth. The second was built by the Emperor Antoninus, about the year 140, as a connexion of the line of forts which Agricola had formed between the Firths of Forth and Clyde. This boundary was not long kept, for in 210 we find the Emperor Severus fortifying the rampart between the Tyne and Solway. Roman armies, however, probably under the command of Lollius Urbicus, had penetrated far beyond the more northerly wall, although, unfortunately, no accounts of their reception are preserved. From comparing Roman remains lately discovered with ancient geographies, it is held as established that the Romans reached the north-east end of Loch Ness, near the modern town of Inverness. The number of roads and camps which they made, and the regularity with which the country was divided into stations, prove their desire to preserve these conquests. When the conquest was thus so far completed, the country was governed in the usual manner of a Roman province; and towns began to rise in the course of time—being generally those whose names are now found to end in *chester*, a termination derived from *castra*, the Latin word for a camp. The Christian religion was also introduced, and Roman literature made some progress in the country.

CONQUEST BY THE SAXONS.

At length a time came when the Romans could no longer defend their own native country against the nations in the north of Europe. The soldiers were then withdrawn from Britain (about the year 440), and the people left to govern themselves. The Caledonians, who did not like to be so much straitened in the north, took advantage of the unprotected state of the Britons to pour in upon them from the other side of the wall, and despoil them of their lives and goods. The British had no resource but to call in another set of protectors,

the Saxons, a warlike people who lived in the north of Germany, and the Jutes and Angles, who inhabited Denmark. The remedy was found hardly any better than the disease. Having once acquired a footing in the island, these hardy strangers proceeded to make it a subject of conquest, as the Romans had done before, with this material difference, that they drove the British to the western parts of the island, particularly into Wales, and settled, with new hordes of their countrymen, over the better part of the land. So completely was the population changed, that, excepting in the names of some of the hills and rivers, the British language was extinguished, and even the name of the country itself was changed from what it originally was to Angle-land, or England, a term taken from the Angles. The conquest required about a hundred and fifty years to be effected, and, like that of the Romans, it extended no farther north than the Firths of Forth and Clyde. Before the Britons were finally cooped up in Wales, many battles were fought; but few of these are accurately recorded. The most distinguished of the British generals were the Princes Vortimer and Aurelius Ambrosius. It is probably on the achievements of the latter that the well-known fables of King Arthur and his knights are founded.

England, exclusive of the western regions, was now divided into seven kingdoms, called Kent, Northumberland, East Anglia, Mercia, Essex, Sussex, and Wessex, each of which was governed by a race descended from the leader who had first subdued it; and the whole have since been called by historians the *Saxon Heptarchy*, the latter word being composed of two Greek words, signifying *seven kingdoms*. To the north of the Ferth dwelt a nation called the Picts, who also had a king, and were in all probability the people with whom Agricola had fought under the name of Caledonians. In the Western Highlands there was another nation, known by the name of the Scots, or Dalriads, who had gradually migrated thither from Ireland, between the middle of the third century and the year 503, when they established, under a chief named Fergus, a monarchy destined in time to absorb all the rest. About the year 700 there were no fewer than fifteen kings, or chiefs, within the island, while Ireland was nearly in the same situation. In Britain, at the same time, five languages were in use, the Latin, Saxon, Welsh, the Pictish, and the Irish. The general power of the country has been found to increase as these nations and principalities were gradually amassed together.

Although three of the Saxon kingdoms, Wessex, Mercia, and Northumberland, became predominant, the Heptarchy prevailed from about the year 585 to 800, when Egbert, king of Wessex, acquired a paramount influence over all the other states, though their kings still continued to reign. Alfred, so celebrated for his virtues, was the grandson of Egbert, and began to reign in the year 871. At this time the Danes, who are now a quiet, inoffensive people, were a nation of pirates, and at the same time heathens. They used to come in large fleets, and commit dreadful ravages on the shores of Britain. For some time they completely overturned the sovereignty of Alfred, and compelled him to live in obscurity in the centre of a marsh. But he at length fell upon them when they thought themselves in no danger, and regained the greater part of his kingdom. Alfred spent the rest of his life in literary study, of which he was very fond, and in forming laws and regulations for the good of his people. He was perhaps the most able, most virtuous, and most popular prince that ever reigned in Britain; and all this is the more surprising, when we find that his predecessors and successors, for many ages, were extremely cruel and ignorant. He died in the year 901, in the fifty-third year of his age.

CONQUEST BY THE NORMANS.

The Saxon line of princes continued to rule—with the exception of three Danish reigns—till the year 1066, when the crown was in the possession of a usurper named Harold. The country was then invaded by William, Duke of Normandy, a man of illegitimate birth, attended by a large and powerful army. Harold opposed him at Hastings (October 14), and after a well-contested battle, his army was defeated, and himself slain. William then caused himself to be crowned king at Westminster; and in the course of a few years he succeeded, by means of his warlike Norman followers, in completely subduing the Saxons. His chiefs were settled upon the lands of those who opposed him, and became the ancestors of most of the present noble families of England.

Previously to this period, the church of Rome, which was the only surviving part of the power of that empire, had established its supremacy over England. The land was also subjected to what is called the feudal system (see HISTORY OF THE MIDDLE AGES), by which all proprietors of land were supposed to hold it from the king for military service, while their tenants were understood to owe them military service in turn for their use of the land. All orders of men were thus kept in a chain of servile obedience, while some of the lower orders were actually slaves to their superiors.

In the year 858, Kenneth, king of the Scots, had added the Pictish kingdom to his own, and his descendant Malcolm II., in 1020, extended his dominions over not only the south of Scotland, but a part of the north of England. Thus, putting aside Wales, which continued to be an independent country, under its own princes, the island was divided, at the time of the Norman Conquest, into two considerable kingdoms, England and Scotland, as they were for some centuries afterwards. Ireland, which had also been invaded by hordes from the north of Europe, was divided into a number of small kingdoms, like England under the Saxon Heptarchy.

EARLY NORMAN KINGS.

William, surnamed *The Conqueror*, reigned from 1066 to 1087, being chiefly engaged all that time in completing the subjugation of the Saxons. He is allowed to have been a man of much sagacity, and a firm ruler; but his temper was violent, and his dispositions brutal. At the time of his death, which took place in Normandy, his eldest son Robert happening to be at a greater distance from London than William, who was the second son, the latter individual seized upon the crown, of which he could not afterwards be dispossessed, till he was shot accidentally by an arrow in the New Forest, in the year 1100. Towards the close of this king's reign, the whole of Christian Europe was agitated by the first Crusade—an expedition for the recovery of the Holy Land from the Saracens. Robert of Normandy had a high command in this enterprise, and gained much fame as a warrior; but while he was in Italy, on his return, his youngest brother Henry usurped the throne left vacant by William, so that he was again disappointed of his birthright. HENRY I.—surnamed *Beauclerc*, from his being a fine scholar—was a prince of some ability; but he disgraced himself by putting out the eyes of his eldest brother, and keeping him nearly thirty years in confinement. Such barbarous conduct shows that in this age might was the only right, and that men hesitated at no actions which might promise to advance their own interests.

Contemporary with William the Conqueror in England, was MALCOLM III. in Scotland, surnamed *Canmore*, from his having a large head. This prince, after overthrowing the celebrated usurper Macbeth, married Margaret, a fugitive Saxon princess, through whom his posterity became the heirs of that race of English sovereigns. He was a good prince, and by settling Saxon refugees upon his lowland territory, did much to improve the character of the Scottish nation, who are described as having been before this time a nation in which there was no admixture of civilisation. At Malcolm's death, in 1093, the crown was contested for a while by a usurper called Donald Bane, and the elder sons of the late monarch, but finally fell to the

peaceable possession of his youngest son DAVID I., who was a prince of much superior character, apparently, to the Norman sovereigns who lived in the same age. The church of Rome having now gained an ascendancy in Scotland, David founded a considerable number of monasteries and churches for the reception of the ministers of that religion. All the most celebrated abbacies in Scotland took their rise in his time.

Henry Beauclerc of England, in order to strengthen his claim by a Saxon alliance, married Maud, the daughter of Malcolm Canmore and of the Princess Margaret. By her he had an only daughter of the same name, whom he married first to the Emperor of Germany, and then to Geoffrey Plantagenet, eldest son of the Earl of Anjou, in France. This lady, and her children by Plantagenet, were properly the heirs of the English crown; but on the death of Henry, in 1185, it was seized by a usurper named STEPHEN, a distant member of the Conqueror's family, who reigned for nineteen years, during which the country was rendered almost desolate by civil contests, in which David of Scotland occasionally joined.

On the death of Stephen, in 1154, the crown fell peacefully to HENRY II., who was the eldest son of Maud, and the first of the Plantagenet race of sovereigns. Henry was an acute and politic prince, though not in any respect more amiable than his predecessors. His reign was principally marked by a series of measures for reducing the power of the Romish clergy, in the course of which some of his courtiers, in 1171, thought they could not do him a better service than to murder Thomas-à-Becket, Archbishop of Canterbury, who had been the chief obstacle to his views, and was one of the ablest and most ambitious men ever produced in England. For his concern in this foul transaction, Henry had to perform a humiliating penance, receiving eighty lashes on his bare back from the monks of Canterbury. We are the less inclined to wonder at this circumstance, when we consider that about this time the Pope had power to cause two kings to perform the menial service of leading his horse.

Henry was the most powerful king that had yet reigned in Britain. Besides the great hereditary domains which he possessed in France, and for which he did homage to the king of that country, he exacted a temporary homage from William of Scotland, the grandson of David, a monarch of great valour, who took the surname of *the Lion*, and who reigned from 1166 to 1214. Henry also added Ireland to his dominions. This island had previously been divided into five kingdoms—Munster, Leinster, Meath, Ulster, and Connaught. The people, being quite uncivilised, were perpetually quarrelling among themselves; and this, with their heathen religion, furnished a flimsy pretext for invading them from England. Dermot Macmorrough, king of Leinster, having been dethroned by his subjects, introduced an English warrior, Richard, Earl of Strigul, generally called *Strongbow*, for the purpose of regaining his possessions. A body composed of 55 knights, 90 esquires, and 460 archers, in all 600 men, was enabled by its superior discipline to overthrow the whole warlike force that could be brought against them; and the conquest was easily completed by Henry in person, who went thither in 1172. The military leaders were left to rule over the country; but they managed their trust so ill, that the Irish never became peaceable and improving subjects of the Norman king, as the English had gradually done.

RICHARD CŒUR DE LION—JOHN—MAGNA CHARTA.

Henry II. was much troubled in his latter years by the disobedience of his children. At his death, in 1189, he was succeeded by his son RICHARD, styled *Cœur de Lion*, or the *Lion-hearted*, from his headstrong courage, and who was much liked by his subjects on that account, though it does not appear that he possessed any other good qualities. At the coronation of Richard, the people were permitted to massacre many thousands of unoffending Jews throughout the kingdom. Almost immediately after his accession, he joined the king of France in a second Crusade; landed in Palestine (1191), and fought with prodigious valour, but with no good result. On one occasion, being offended at a breach of truce by his opponent Saladin, he beheaded 5000 prisoners; whose deaths were immediately revenged by a similar massacre of Christian prisoners. In 1192, he returned with a small remnant of his gallant army, and being shipwrecked at Aquileia, wandered in disguise into the dominions of his mortal enemy the Duke of Austria, who, with the Emperor of Germany, detained him till he was redeemed by a ransom, which impoverished nearly the whole of his subjects. This prince spent the rest of his life in unavailing wars with Philip of France, and was killed at the siege of a castle in Limousin, in 1199, after a reign of ten years, of which he had spent only about three months in England.

JOHN, the younger brother of Richard, succeeded, although Arthur, Duke of Bretagne, the son of an intermediate brother, was the proper heir. John, who was at once vain, cruel, and weak, alienated the affections of his subjects almost at the very first by the assassination of his nephew, which he is said to have performed with his own hands. The weakness of kings is often the means of giving increased liberties and privileges to the people. The paltry tyranny and wickedness of John caused his barons to rise against him, and the result was, that, on the 19th June 1215, he was compelled by them to sign what is called the *Magna Charta*, or Great Charter, granting them many privileges and exemptions, and generally securing the personal liberty of his subjects. The principal point concerning the nation at large was, that no tax or supply should be levied from them without their own consent in a Great Council—the first idea of a Parliament. Some excellent provisions were also made regarding courts of law and justice, so as to secure all but the guilty.

The Pope, it appears, regarded the Magna Charta as a shameful violation of the royal prerogative, and excommunicated its authors, as being worse, in his estimation, than infidels. The opinion of a leading modern historian is very different. He says, 'To have produced the Great Charter, to have preserved it, to have matured it, constitute the immortal claim of England on the esteem of mankind.'

HENRY III.—ORIGIN OF PARLIAMENT.

John, at his death in 1216, was succeeded by his son, HENRY III., a weak and worthless prince, who ascended the throne in his boyhood, and reigned fifty-six years, without having performed one worthy act of sufficient consequence to be detailed. In his reign was held the first assemblage approaching to the character of a Parliament. It was first called in 1225, in order to give supplies for carrying on a war against France. The money was only granted on condition that the Great Charter should be confirmed; and thus the example was set at the very first, for rendering supplies a check upon the prerogative of the king, and gradually reducing that power to its present comparatively moderate level. Under the earlier Norman kings, and even, it is believed, under the Saxons, an assembly called the Great Council had shared with the sovereign the power of framing laws; but it was only now that the body had any power to balance that of the sovereign, and it was not till 1265 that representatives from the inhabitants of towns were introduced.

EDWARD I. AND II.—ATTEMPTED CONQUEST OF SCOTLAND.

Henry III., at his death in 1272, was succeeded by his son EDWARD I., a prince as warlike and sagacious as his father was the reverse. He distinguished himself by his attempts to add Wales to his kingdom, an object which he accomplished in 1282, by the overthrow and murder of Llewellen, the last prince of that country. In the meantime, from the death of William the Lion in 1214, Scotland had been ruled by two princes, ALEXANDER II. and III., under whom it advanced considerably in wealth, civilisation, and comfort. On the death

of Alexander III., in 1285, the crown fell to his granddaughter MARGARET, a young girl, whose father was Eric, king of Norway. Edward formed a treaty with the Estates of Scotland for a marriage between this princess and his son, whom he styled Prince of Wales. Unfortunately, the young lady died on her voyage to Scotland; and the crown was left to be disputed by a multitude of distant relations, of whom JOHN BALIOL and ROBERT BRUCE seemed to have the best right. Edward, being resolved to make Scotland his own at all hazards, interfered in this dispute, and being appointed arbitrator among the competitors, persuaded them to own in the first place an ill-defined claim put forward by himself of the right of paramountcy or superior sovereignty over Scotland. When this was done, he appointed Baliol to be his vassal king, an honour which the unfortunate man was not long permitted to enjoy. Having driven Baliol to resistance, he invaded the country, overthrew his army, and stripping him of his sovereignty, assumed to himself the dominion of Scotland, as a right forfeited to him by the rebellion of his vassal. After he had retired, a brave Scottish gentleman, named William Wallace, raised an insurrection against his officers, and defeating his army at Stirling in 1298, cleared the whole country of its southern invaders. But in the succeeding year, this noble patriot was defeated by Edward in person at Falkirk, and the English yoke was again imposed. It may be remarked, that this could have hardly taken place if the common people, who rose with Wallace, and who were wholly of Celtic and Saxon origin, had been led and encouraged by the nobility. The grandees of Scotland, and even the competitors for the crown, being recent Norman settlers, were disposed to render obedience to the English sovereign.

Some time after the death of Wallace, while Edward was engrossed with his French wars, ROBERT BRUCE, Earl of Carrick, grandson of him who had competed with Baliol, conceived the idea of putting himself at the head of the Scots, and endeavouring by their means at once to gain the crown, and to recover the independence of the kingdom. After a series of adventures, among which was the unpremeditated murder of a rival named Comyn, Bruce caused himself, in 1306, to be crowned at Scone. For some time after he had to skulk as a fugitive, being unable to maintain his ground against the English officers; but at length he became so formidable, that Edward found it necessary (1307) to lead a large army against him. The English monarch, worn out with fatigue and age, died on the coast of the Solway Firth, when just within sight of Scotland, leaving his sceptre to his son EDWARD II. That weak and foolish prince immediately returned to London, leaving Bruce to contest with his inferior officers.

After several years of constant skirmishing, during which the Scottish king was able to maintain his ground, Edward resolved to make one decisive effort to reduce Scotland to subjection. In the summer of 1314, he invaded it with an army of 100,000 men. Bruce drew up his troops, which were only 30,000 in number, at Bannockburn, near Stirling. Partly by steady valour, and partly by the use of stratagems, the Scots were victorious, and Edward fled ignominiously from the field. The Scottish king gained an immense booty, besides securing his crown and the independence of his country. He soon after sent his brother Edward, with a body of troops, to Ireland, to assist the native chiefs in resisting the English. This bold young knight was crowned King of Ireland, and for some time held his ground against the English forces, but was at length defeated and slain.

The weakness of Edward II. was chiefly shown in a fondness for favourites, into whose hands he committed the whole interests of his people. The first was a low Frenchman, named Piers Gaveston, who soon fell a victim to the indignation of the barons. The second, Hugh Spencer, misgoverned the country for several years, till at length the Queen and Prince of Wales raised an insurrection against the king, and caused him to be deposed, as quite unfit to reign. The Prince was then crowned as EDWARD III. (1327), being as yet only about fourteen years of age; and in the course of a few months the degraded sovereign was cruelly put to death in Berkeley Castle.

During the minority of the young king, the reins of government were held by his mother and the Earl of March. Under their administration, a peace was concluded with King Robert of Scotland, of which one of the conditions was a full acknowledgment of the independence of the Scottish monarchy, which had been a matter of dispute for some ages.

EDWARD III.—RICHARD II.

Edward III., who soon after assumed full power, was destined to make good the remark prevalent at this time, that the kings of England were alternately able and imbecile. He was a warlike and sagacious monarch, and inspired by all his grandfather's desire of conquest. In 1329, Robert Bruce died, and was succeeded by his infant son DAVID II., to whom a young sister of the English king was married, in terms of the late treaty. Notwithstanding this connection, Edward aided a son of John Baliol in an attempt to gain the Scottish crown. Edward Baliol overthrew the Regent of Scotland at Duplin, September 1332, and for two months reigned as King of Scots, while David and his wife took refuge in France. Though now expelled, Baliol afterwards returned to renew his claims, and for many years the country was harassed by unceasing wars, in which the English took a leading part.

But for his attention being diverted to France, Edward III. would have made a more formidable effort to subdue Scotland, and might have succeeded. He was led into a long course of warfare with France, in consequence of an absurd pretension which he made to its crown. In the victories which he gained at Cressy (August 26, 1346) and Poitiers (September 17, 1356), the national valour, his own, and that of his celebrated son, the Black Prince, were shown conspicuously; but this lavish expenditure of the resources of his kingdom, in which he was supported by his parliament, was of no permanent benefit, even to himself, for whom alone it was made. In those days, almost all men fought well, but very few had the art to improve their victories. John, king of France, who had been made captive at Poitiers, and David, king of Scotland, who had been taken in 1346, while conducting an invasion of England, were at one time prisoners in England; but no permanent advantage was ever gained over either of the states thus deprived of their sovereigns. In 1361, after about twenty years of active fighting, the English king left France with little more territory than he had previously enjoyed. Edward had invaded Scotland with a powerful army in 1356, but without making any impression. The Scots, under David's nephew, Robert Stewart, effectually protected themselves, not only from his arms, but from a proposal which David himself basely undertook to make, that Lionel, the third son of the English king, should be acknowledged as his successor. Edward died in 1377, a year after the decease of his son the Black Prince; and notwithstanding all their brilliant exploits, the English territories in France were less than at the beginning of the reign.

England was at this time affected more than at any other by the fashions of chivalry. This was a military enthusiasm, which for some centuries pervaded all Christian Europe. It prompted, as one of its first principles, a heedless bravery in encountering all kinds of danger. Its votaries were expected to be particularly bold in behalf of the fair sex, insomuch that a young knight would sometimes challenge to mortal combat any one who denied his mistress to be the loveliest in the world. Tournaments were held, at which knights clad in complete armour would ride against each other at full speed with levelled lances, merely to try which had the greatest strength and skill; and many were killed on these occasions. It was a system full of extravagance, and tending to bloodshed; but neverthe-

less it maintained a certain courtesy towards females, and a romantic principle of honour, which we may be glad to admire, considering how rude was almost every other feature of the age.

Edward III. was succeeded by his grandson, RICHARD II., then a boy of eleven years of age, and who proved to be a person of weak and profligate character. The Commons took advantage of the irregularity of his government to strengthen their privileges, which they had with difficulty sustained during the more powerful rule of his predecessor. Early in this reign they assumed the right, not only of taxing the country, but of seeing how the money was spent. Indignant at the severity of a tax imposed upon all grown-up persons, the peasantry of the eastern parts of England rose, in 1381, under a person of their own order, named Wat Tyler, and advanced, to the number of 60,000, to London, where they put to death the chancellor and primate, as evil counsellors of their sovereign. They demanded the abolition of bondage, the liberty of buying and selling in fairs and markets, a general pardon, and the reduction of the rent of land to an equal rate. The king came to confer with them at Smithfield, where, on some slight pretence, Walworth, mayor of London, stabbed Wat Tyler with a dagger—a weapon which has since figured in the armorial bearings of the metropolis. The peasants were dismayed, and submitted, and no fewer than fifteen hundred of them were hanged. Wat Tyler's insurrection certainly proceeded upon a glimmering sense of those equal rights of mankind which have since been generally acknowledged; and it is remarkable, that at the same time the doctrines of the reformer Wickliffe were first heard of. This learned ecclesiastic wrote against the power of the Pope, and some of the most important points of the Romish faith, and also executed a translation of the Bible into English. His writings are acknowledged to have been of material, though not immediate effect, in bringing about the reformation of religion.

The country was misgoverned by Richard II. till 1399, when he was deposed by his subjects under the leading of his cousin, Henry, Duke of Lancaster. This person, though some nearer the throne were alive, was crowned as HENRY IV., and his predecessor, Richard, was soon after murdered. In the meantime, David of Scotland died in 1371, and was succeeded by ROBERT STEWART, who was the first monarch of that family. ROBERT I., dying in 1389, was succeeded by his son ROBERT II., who was a good and gentle prince. He had two sons, David and James: the former was starved to death by his uncle, the Duke of Albany; and the latter, when on his way to France for his education, was seized by Henry IV. of England, and kept captive in that country for eighteen years. Robert II. then died of a broken heart (1406), and the kingdom fell into the hands of the Duke of Albany, at whose death, in 1419, it was governed by his son Duke Murdoch, a very imbecile personage.

HOUSE OF LANCASTER.

Henry IV. proved a prudent prince, and comparatively a good ruler. The settlement of the crown upon him by parliament was a good precedent, though perhaps only dictated under the influence of his successful arms. He was much troubled by insurrections, particularly a formidable one by Percy, Earl of Northumberland—and one still more difficult to put down in Wales, where Owen Glendower, a descendant of the British princes, kept his ground for several years.

On the death of Henry IV. in 1413, he was succeeded by his son, who was proclaimed under the title of HENRY V. The young king attained high popularity, on account of his impartial administration of justice, and his zeal to protect the poor from the oppressions of their superiors. His reign is less agreeably marked by the persecutions of the Lollards, a body of religious reformers, many of whom were condemned to the flames. Being determined to use every endeavour to gain the crown of France, which he considered his by right of birth, he landed in Normandy with 30,000 men (August 1415), and gave battle to a much superior force of the French at Agincourt. He gained a complete victory, which was sullied by his afterwards ordering a massacre of his prisoners, under the apprehension that an attempt was to be made to rescue them. The war was carried on for some years longer, and Henry would have probably succeeded in making good his claim to the French crown, if he had not died prematurely of a dysentery (August 31, 1422), in the thirty-fourth year of his age, leaving the throne to an infant nine months old, who was proclaimed as HENRY VI., King of France and England.

Under Henry VI., whose power was for some time in the hands of his uncle the Duke of Bedford, the English maintained their footing in France for several years, and at the battle of Verneuil, in 1424, rivalled the glory of Cressy and Poitiers. At that conflict, a body of Scotch, 7000 strong, who had proved of material service to the French, were nearly cut off. In 1428, when France seemed completely sunk beneath the English rule, the interests of the native prince were suddenly revived by a simple maiden, named Joan of Arc, who pretended to have been commissioned by Heaven to save her country; and entering into the French army, was the cause of several signal reverses to the English. By her enthusiastic exertions, and the trust everywhere reposed in her supernatural character, Charles VII. was crowned at Rheims in 1430. Being soon after taken prisoner, the heroic maiden was, by the English, condemned for witchcraft, and burnt. Nevertheless, about the year 1453, the French monarch had retrieved the whole of his dominions from the English, with the exception of Calais.

Henry VI. was remarkable for the extreme weakness of his character. His cousin, Richard, Duke of York, descended from an elder son of Edward III., and therefore possessed of a superior title to the throne, conceived that Henry's imbecility afforded a good opportunity for asserting what he thought his birthright. Thus commenced the famous *Wars of the Roses*, as they were called, from the badges of the families of York and Lancaster—the former of which was a red, while the latter was a white rose. In 1454, the duke gained a decisive victory over the forces of Henry, which were led by his spirited consort, Margaret of Anjou. In some succeeding engagements the friends of Henry were victorious; and at length, in the battle of Wakefield (December 24, 1460), the forces of the Duke of York were signally defeated, and himself, with one of his sons, taken and put to death. His pretensions were then taken up by his eldest son Edward, who, with the assistance of the Earl of Warwick, gained such advantages next year, that he assumed the crown. Before this was accomplished, many thousands had fallen on both sides. Henry, who cared little for the pomp of sovereignty, was confined in the Tower.

Scotland, in the meantime (1424), had redeemed her king from his captivity in England; and that prince, styled JAMES I., had proved a great legislator and reformer, not to speak of his personal accomplishments in music and literature, which surpassed those of every contemporary monarch. James did much to reduce the Highlands to an obedience under the Scottish government, and also to break up the enormous power of the nobles. By these proceedings, however, he excited a deep hatred in the bosoms of some of his subjects; and in 1437 he fell a victim to assassination at Perth. He was succeeded by his infant son, JAMES II., the greater part of whose reign was spent in a harassing contention with the powerful house of Douglas, and who was finally killed, in the flower of his age, by the bursting of a cannon before Roxburgh Castle. His successor, JAMES III., was also a minor, and, on reaching man's estate, proved to be a weak, though not ill-meaning prince. He fell a victim, in 1488, to a conspiracy formed by his subjects, and which was led by his eldest son. The morality of princes in this age seems to have been much upon a par with that ascribed

to the Turkish sovereigns of a later period. They never scrupled to destroy life, either within the circle of their own family, or out of it, when it suited their interests or their ambition to do so.

HOUSE OF YORK.

Edward, of the House of York, styled EDWARD IV., who commenced his reign in the nineteenth year of his age, reigned ten years, perpetually disturbed by renewed attempts of the Lancastrian party, of which he mercilessly sacrificed many thousands who fell into his hands. At length, having offended the Earl of Warwick, who had been chiefly instrumental in placing him upon the throne, that powerful nobleman raised an insurrection against him, and in eleven days was master of the kingdom, while Edward had to take refuge on the continent. Henry VI. was then restored, and Warwick acquired the title of King-maker. Nine months after (1471), Edward landed with a small body of followers, and having called his partisans around him, overthrew and killed Warwick at St Alban's. Margaret of Anjou, who had fought battles for her husband in almost every province of England, gathered a new army, and opposed Edward at Tewkesbury Park, where she was completely defeated. Her son and husband being taken, were murdered in cold blood, and she herself spent the remainder of her singular life in France. Edward reigned, a profligate and a tyrant, till 1483, when he died in the forty-second year of his age. He had previously caused his brother, the equally profligate Duke of Clarence, to be drowned in a butt of malmsey wine.

During the reign of Edward IV., the plague frequently broke out in England, and carried off immense numbers of the people. It was particularly fatal in London, and in all other places where many houses were huddled closely together, with imperfect means of cleaning and ventilation. It was calculated that the disease, on one occasion in this reign, destroyed as many lives as the fifteen years' war. The plague did not cease to occur in England, as well as in other European countries, until considerable improvements had taken place in the habits of the people, especially in point of cleanliness.

EDWARD V., the eldest son of Edward IV., was a boy of eleven years when he succeeded to the crown. His uncle, Richard, Duke of Gloucester, a wicked and deformed wretch, soon after contrived to obtain the chief power, and also to cause the murder of the young king and his still younger brother in the Tower. He then mounted the throne under the title of RICHARD III. For two years, this disgrace to humanity continued to reign, though universally abhorred by his people. At length, in 1485, Henry Tudor, Earl of Richmond, a connexion rather than a descendant of the Lancaster family, resolved to make an attempt upon the English crown. Having landed with about 2000 followers at Milford Haven, he advanced into the country, and speedily gained such accessions of force as enabled him to meet and overthrow Richard at Bosworth Field, where the tyrant was slain, and the victorious Richmond was immediately proclaimed king, under the title of HENRY VII. The new monarch soon after sought to strengthen his title by marrying Elizabeth, the daughter and heir of Edward IV., by which it was said the families of York and Lancaster were united.

HOUSE OF TUDOR—HENRY VII.

Under Henry VII. the country revived from the evils of a long civil war, in the course of which the chief nobility had been broken down, and the industry and commerce of the land interrupted. It was remarkable, nevertheless, that, during the past period, England was upon the whole an improving country. The evils of war had fallen chiefly on those who made it; the government, however disturbed by various claimants of the throne, was mild and equitable—at least as compared with that of other countries; and the people at large throve under a system in which their own consent, by the voice of the House of Commons, was necessary to the making of every new law, and the laying on of every tax.

The reign of Henry VII. was much disturbed by insurrections, in consequence of his imperfect title. A baker's boy, named Lambert Symnel, and a Jew's son, named Perkin Warbeck, were successively set up by the York party—the one as a son of the late Duke of Clarence, and the other as the younger brother of Edward V., but were both defeated. Warbeck was hanged at Tyburn in 1499; and nearly about the same time, Henry procured, by forms of law, the death of the Earl of Warwick, the real son of the late Duke of Clarence, a poor idiot boy, whom he had kept fifteen years in confinement, and whose title to the throne, being superior to his own, rendered him uneasy.

Henry, though a cruel prince, as were most of the sovereigns of his age, was a sagacious and peaceful ruler. He paid great attention to all his affairs, and in some of his acts looked far beyond the present time. For example, by marrying his daughter Margaret to James IV. of Scotland, he provided for the possibility of the future union of the two crowns. By a law allowing men of property to break entails, he ensured the reduction of the great lords, and the increase of the number of small proprietors. His constant policy was to depress the chief nobles, and to elevate the clergy, lawyers, and men of new families, as most likely to be dependent on him. The greatest fault of his character was his excessive love of money, of which he amassed an immense sum. During his reign, Ireland was made more dependent on the English crown by a statute prohibiting any parliament from being held in it until the king should give his consent.

HENRY VIII.

Henry VII. died in April 1509, in the fifty-third year of his age. His eldest surviving son and successor, HENRY VIII., was now in his eighteenth year. Young, handsome, and supposed to be amiable, he enjoyed at first a high degree of popularity. Some years before, he had been affianced to Catherine, a Spanish princess, who had previously been the wife of his deceased brother Arthur: he was now married to this lady, the Pope having previously granted a dispensation for that purpose. For many years the reign of Henry was unmarked by any unusual incidents. The chief administration of affairs was committed to a low-born but proud churchman, the celebrated Cardinal Wolsey. The king became much engaged in continental politics; and during a war which he carried on against France, his brother-in-law James IV., who sided with that state, made an unfortunate irruption into the north of England, and was overthrown and slain, with the greater part of his nobility (September 9, 1513), at Flodden.

About this time some changes of great importance to European society took place. Almost ever since the destruction of the Roman Empire, the nations which arose out of it had remained in subjection to the Papal See, which might be said to have inherited the universal sway of that government, but altered from an authority over the bodies of men to an empire over their minds. In the opinion of many, this authority of the Roman Catholic religion had in the course of time become much abused, while the religion itself was corrupted by many superstitious observances. So long as men had continued to be the thoughtless warriors and unlettered peasants which they had been in the middle ages, it is not probable that they would ever have called in question either the authority of the Pope or the purity of the Catholic faith. But, with knowledge, and the rise of a commercial and manufacturing class, came a disposition to inquire into the authority of this great religious empire. The art of printing, discovered about the middle of the preceding century, and which was now rendering literature accessible to most classes of the community, tended greatly to bring about this revolution in European intellect. The minds of men, indeed, seem at this time as if awaking from a long sleep; and it might well have been a question with

persons who had reflection, but no experience, whether the change was to turn to evil or to good.

When men's minds are in a state of preparation for any great change, a very small matter is required to set them in motion. At Wirtemberg, in Germany, there was an Augustine monk, named Martin Luther, who became incensed at the Roman see, in consequence of some injury which he conceived to have been done to his order by the Pope having granted the privilege of selling indulgences to the Dominican order of friars. Being a man of a bold and inquiring mind, he did not rest satisfied till he had convinced himself, and many others around him, that the indulgences were sinful, and that the Pope had no right to grant them. This happened about the year 1517. Controversy and persecution gradually extended the views of Luther, till he at length openly disavowed the authority of the Pope, and condemned some of the most important peculiarities of the Catholic system of worship. In these proceedings, Luther was countenanced by some of the states in Germany, and his doctrines were speedily established in the northern countries of Europe.

THE REFORMATION.

Henry VIII., as the second son of his father, had been originally educated for the church, and still retained a taste for theological learning. He now distinguished himself by writing a book against the Lutheran doctrines; and the Pope was so much pleased with it as to grant him the title of *Defender of the Faith*. Henry was not destined, however, to continue long an adherent of the Roman pontiff. In the year 1527, he became enamoured of a young gentlewoman named Anne Boleyn, who was one of his wife's attendants. He immediately conceived the design of annulling his marriage with Catherine, and marrying this younger and more agreeable person. Finding a pretext for such an act in the previous marriage of Catherine to his brother, he attempted to obtain from the Pope a decree, declaring his own marriage unlawful, and that the dispensation upon which it had proceeded was beyond the powers of the former Pope to grant. The pontiff (Clement VII.) was much perplexed by this request of King Henry, because he could not accede to it without offending Charles V., Emperor of Germany, one of his best supporters, and the brother of Queen Catherine, and at the same time humbling the professed powers of the Papacy, which were now trembling under the attacks of Luther.

Henry desired to employ the influence of his minister, Cardinal Wolsey, who had now reached a degree of opulence and pride never before attained by a subject of England. But Wolsey, with all his greatness, could not venture to urge a matter disagreeable to the Pope, who was more his master than King Henry. The process went on for several years, and still his passion for Anne Boleyn continued unabated. Wolsey at length fell under the king's displeasure for refusing to serve him in this object, was stripped of all his places of power and wealth, and in November 1530, expired at Leicester Abbey, declaring that, if he had served his God as diligently as his king, he would not thus have been given over in his gray hairs. The uncontrollable desire of the king to possess Anne Boleyn, was destined to be the immediate cause of one of the most important changes that ever took place in England—no less than a total reformation of the national religion. In order to annul his marriage with Catherine, and enable him to marry Anne Boleyn, he found it necessary to shake off the authority of the Pope, and procure himself to be acknowledged in Parliament as the supreme head of the English church. His marriage with Anne took place in 1533, and in the same year was born his celebrated daughter Elizabeth.

In 1536, Henry became as anxious to put away Queen Anne as he had ever been to rid himself of Queen Catherine. He had contracted a passion for Jane Seymour, a young lady then of the queen's bedchamber, as Anne herself had been in that of Catherine. In order to gratify this new passion, he accused Anne of what appears to have been an imaginary frailty, and within a month from the time when she had been an honoured queen, she was beheaded (May 19) in the Tower. On the very next day he married Jane Seymour, who soon after died in giving birth to a son (afterwards Edward VI.) His daughters, Mary and Elizabeth, were declared illegitimate by act of Parliament, and therefore excluded from the succession.

Hitherto, though professing independence of Rome, Henry still maintained, and even enforced, by severe and bloody laws, the most of its doctrines. He now took measures for altering this system of worship to something nearer the Lutheran model, and also for suppressing the numerous monasteries throughout the country. Being possessed of more despotic power, and, what is stranger still, of more popularity, than any former sovereign of England, he was able to encounter the dreadful risk of offending by these means a vastly powerful corporation, which seems, moreover, to have been regarded with much sincere affection and respect in many parts of England. No fewer than 645 monasteries, 2374 chanteries and chapels, 90 colleges, and 110 hospitals, enjoying altogether a revenue of £161,000, were broken up by this powerful and unscrupulous monarch. He partly seized the revenues for his own use, and partly gave them away to the persons who most actively assisted him, and who seemed most able to protect his government from the effects of such a sweeping reform. By this act, which took place in 1537, the Reformation was completed in England. Yet for many years Henry vacillated so much in his opinions, and enforced these with such severe enactments, that many persons of both religions were burnt as heretics. It was in the southern and eastern parts of England, where the commercial classes at this time chiefly resided, that the doctrines of the Reformation were most prevalent. In the western and northern parts of the country, Catholicism continued to flourish; and in Ireland, which was remotest of all from the continent, the Protestant faith made little or no impression.

After the death of Jane Seymour, Henry married Anne of Cleves, a German princess, with whose person, however, he was not pleased; and he therefore divorced her by an act of Parliament. He next married Catherine Howard, niece to the Duke of Norfolk; but had not been long united to her when he discovered that she had committed a serious indiscretion before marriage. This was considered a sufficient reason for beheading the unfortunate queen, and attainting all her relations. Though Henry had thus murdered two wives, and divorced other two, and become, moreover, a monster in form as well as in his passions and mind, he succeeded in obtaining for his sixth wife (1543) Catherine Parr, widow of Lord Latimer, who, it is certain, only contrived to escape destruction by her extraordinary prudence. Almost all who ever served Henry VIII. as ministers, either to his authority or to his pleasures, were destroyed by him. Wolsey was either driven to suicide, or died of a broken heart; Thomas Cromwell, who succeeded that minister, and chiefly aided the king in bringing about the Reformation—Sir Thomas More, lord chancellor, the most virtuous, most able, and most consistent man of his time—the Earl of Surrey, who was one of the most accomplished knights of the age, and the first poet who wrote the English language with perfect taste—all suffered the same fate with Anne Boleyn and Catherine Howard.

When James IV. died at Flodden, in 1513, the Scottish crown fell to his infant son JAMES V., who struggled through a turbulent minority, and was now a gay, and, upon the whole, an amiable prince. His uncle, Henry VIII., endeavoured to bring him into his views respecting religion; but James, who was much in the power of the Catholic clergy, appears to have wished to become the head of the Popish party in England, in the hope of succeeding, by their means, to the throne of that country. A war latterly broke out between the two monarchs, and the Scottish army having refused

to fight, from a dislike to the expedition, James died (December 1542) of a broken heart, leaving an only child, MARY, who was not above a week old. Henry immediately conceived the idea of marrying his son Edward to this infant queen, by which he calculated that two hostile nations should be united under one sovereignty, and the Protestant church in England be supported by a similar establishment in Scotland. This project, however, was resisted by the Scots, of whom very few as yet were inclined to the Protestant doctrines. Henry, enraged at their hesitation, sent a fleet and army, in 1544, to inflict vengeance upon them. The Scots endured with great patience the burning of their capital city, and many other devastations, but still refused the match. The government of Scotland was now chiefly in the hands of Cardinal Beaton, a man of bold and decisive intellect, who zealously applied himself to suppress the reforming preachers, and regarded the English match as likely to bring about the destruction of the Catholic religion.

EDWARD VI.—QUEEN MARY.

Henry died, January 28, 1547, leaving the throne to his only son, a boy of ten years of age, who was immediately proclaimed king under the title of EDWARD VI. The Duke of Somerset, maternal uncle to the young king, became supreme ruler under the title of Protector, and continued to maintain the Protestant doctrines. Under this reign, the church of England assumed its present form, and the Book of Common Prayer was composed nearly as it now exists. Somerset being resolved to effect, if possible, the match between Edward VI. and Mary of Scotland, invaded that country in the autumn of 1547, and was met at Musselburgh by a large army under the governor, the Earl of Arran. Though the Scotch were animated by bitter animosity against the English, against their religion, and against the object of their expedition, they did not fight with their usual resolution, but were defeated, and pursued with great slaughter. Finding them still obstinate in refusing to give up their queen, Somerset laid waste a great part of the country, and then retired. Previous to this period, Cardinal Beaton had been assassinated by private enemies; but the Scotch were encouraged to persevere by the court of France, to which they now sent the young queen for protection.

In the reign of Edward VI. the government was conducted mildly, until the Protector Somerset was degraded from his authority by the rising influence of Dudley, Duke of Northumberland, who caused him soon after to be tried and executed. Northumberland, who was secretly a Roman Catholic, was not so mild or popular a ruler. Yet, throughout the whole reign of Edward VI., which was terminated by his death on the 6th of July 1553, at the early age of sixteen, no religious party was persecuted, except those who denied the fundamental doctrines of the Christian religion. It would have been well for the honour of a church which has produced many great men, and to which the modern world is indebted for the very existence of Christianity, if it had not been tempted after this period to commence a very different course of action. The crown now belonged by birthright to MARY, the eldest daughter of Henry VIII., who was a zealous Catholic. Northumberland, however, assuming the illegitimacy of that princess and her sister Elizabeth, set up as queen the Lady Jane Grey, who was descended from a younger sister of King Henry, and who had been married to a son of the Duke of Northumberland. Lady Jane was the most beautiful, most intelligent, and most amiable of all the females who appear in the history of England. Though only seventeen, she was deeply learned, and yet preserved all the unaffected graces of character proper to her interesting age. Unfortunately, her father-in-law Northumberland was so much disliked, that the Catholics were enabled to displace her from the throne in eight days, and to set up in her stead the Princess Mary. Northumberland, Lady Jane, and her husband, Guildford, Lord Dudley, were all beheaded by that savage princess, who soon after took steps for restoring the Catholic religion, and married Philip II., king of Spain, in order to strengthen herself against the Protestant interest. Mary experienced some resistance from her Protestant subjects, and being under great suspicion of her sister Elizabeth, who professed the reformed faith, but took no part against her, was almost on the point of ordering her to execution also. As soon as she had replaced the Catholic system, and found herself in possession of sufficient power, she began that career of persecution which has rendered her name so infamous. Five out of fourteen Protestant bishops, including the revered names of Cranmer, Latimer, and Ridley, were committed to the flames as heretics; and during the ensuing part of her reign, which was closed by her death, November 17, 1558, nearly three hundred persons suffered in the same manner. These scenes did not take place without exciting horror in the minds of Englishmen in general, including even many Catholics; but the royal authority was at all times too great under this line of princes to allow of effectual resistance. Such a persecution, however, naturally fixed in the minds of the British Protestants a hereditary horror for the name of Catholic, which has in its turn been productive of many retaliatory persecutions, almost equally to be lamented. In the latter part of her reign, she was drawn by her husband into a war with France, of which the only effect was the loss of Calais, the last of the French possessions of the sovereigns of England. The natural sourness of Mary's temper was increased by this disgraceful event, as well as by her want of children, and she died in a state of great unhappiness.

ELIZABETH—MARY, QUEEN OF SCOTS—REFORMATION IN SCOTLAND.

A more auspicious scene opened for England in the accession of ELIZABETH, a princess of great native vigour of mind, and who had been much improved by adversity, having been kept in prison during the whole reign of her sister. From the peculiar circumstances of Elizabeth's birth, her right of succession was denied by all the Catholics at home and abroad. This party considered Mary, Queen of Scots, who was descended from the eldest sister of Henry VIII., and had been brought up in the Catholic faith at the court of France, as their legitimate sovereign. Elizabeth had no support in any quarter, except among her Protestant subjects. The Pope issued a bull, which, directly or indirectly, pronounced her a usurper, and gave permission to her subjects to remove her from the throne. The court of France professed to consider the Queen of Scots, who had recently been married to the Dauphin, as the Queen of England. Under these circumstances, Elizabeth found no chance of safety except in restoring and maintaining the Protestant religion in her own country, and in seeking to support it in all others where the people were favourable to it. The Scottish nation being now engaged in a struggle with their regent, Mary of Guise, in behalf of Protestantism, Elizabeth gladly acceded to a proposal made by the nobles of that country, and sent a party of troops, by whose assistance the reformed religion was established (1560). In bringing about this change, the chief native leaders were James Stewart, a natural son of King James V., and John Knox, who had once been a friar, but was now a Protestant preacher. As a natural consequence of the obligation which the English queen had conferred upon the Scottish reformers, she acquired an influence over the country which was never altogether lost.

About the time when the Scottish Parliament was establishing the reformed religion, Mary of Guise breathed her last, leaving the country to be managed by the reforming nobles. Her daughter, the Queen of Scots, now eighteen years of age, and the most beautiful woman of her time, had in 1559 become the queen-consort of France; but in consequence of the death of her husband, she was next year left without any political interest in that country. She accordingly, in August 1561, returned to Scotland, and assumed the

sovereignty of a country which was chiefly under the rule of fierce nobles, and where the people, from the difference of their religious faiths, as well as their native barbarism, were little fitted to yield her the obedience of loyal and loving subjects.

The change of religion in Scotland was of a more decisive kind than it had been in England. The English Reformation had been effected by sovereigns who, while they wished to throw off the supremacy of the Pope, and some of the Catholic rites, desired to give as little way as possible to popular principles. They therefore not only seized the supremacy of the church to themselves, but, by bishops and other dignitaries, made it an efficient instrument for supporting monarchical government. In Scotland, where the Reformation was effected by the nobles and the people, at a time when still bolder principles had sprung up, none of this machinery of power was retained. The clergy were placed on a footing of perfect equality; they were all of them engaged in parochial duties, and only a small part of the ancient ecclesiastical revenues was allowed to them. In imitation of the system established at Geneva, their general affairs, instead of being intrusted to the hands of bishops, were confided to courts formed by themselves. These courts, being partly formed by lay elders, kept up a sympathy and attachment among the community, which has never existed in so great a degree in the English church. What was of perhaps still greater importance, while a large part of the ancient revenues was absorbed by the nobles, a very considerable portion was devoted to the maintenance of parish schools, under the express control of the clergy. These at once formed regular nurseries of Protestant Christians, and disseminated the elements of learning more extensively over this small and remote country than it had ever been over any other part of the world.

Queen Mary, having little power in her own country, was obliged to govern by means of her natural brother, James Stewart, whom she created Earl of Moray, and who was the leader of the Protestant interest in Scotland. Personally, however, she was intimately connected with the great Catholic powers of the continent, and became a party, in 1564, to a coalition formed by them for the suppression of Protestantism all over Europe. She had never yet resigned her pretensions to the English throne, but lived in the hope that, when the Catholics succeeded in everywhere subduing the Protestants, she would attain that object. Elizabeth, who had only the support of the Protestant part of her own subjects, with a friendly feeling among the Scotch and other unimportant Protestant nations, had great reason to dread the confederacy formed against her. She nevertheless stood firm upon the Protestant faith, and the principles of a comparatively liberal and popular government, as the only safe position.

A series of unfortunate events threw Mary into the hands of Elizabeth. The former queen, in 1565, married her cousin Lord Darnley, and by that means alienated the affections of her brother and chief minister, the Earl of Moray, as well as of other Protestant lords, who raised a rebellion against her, and were obliged to fly into England. Soon after, the jealousy of Darnley respecting an Italian musician named Rizzio, who acted as French secretary to the queen, united him in a conspiracy with the banished Protestant noblemen for the murder of that humble foreigner, which was effected under very barbarous circumstances, March 9, 1566. Mary, who was delivered in the succeeding June, of her son James, withdrew her affections entirely from her husband, and began to confide chiefly in the Earl of Bothwell, who some months afterwards caused Darnley to be blown up by gunpowder, while he lay in a state of sickness; in which transaction it has always been suspected, but never proved, that the queen had a considerable share. Bothwell soon after forced her, in appearance, into a marriage, which excited so much indignation among her subjects, that the same Protestant lords who had effected the Reformation, and were the friends of Elizabeth, easily obtained the possession of her person, and having deposed her, crowned her infant son as king, under the title of JAMES VI., while the regency was vested in the Earl of Moray. In May 1568, Mary escaped from her prison in Lochleven, and put herself at the head of a body of her partisans, but was defeated by the regent at the battle of Langside, and was then compelled to seek refuge in England. By placing her rival under strict confinement, and extending an effectual protection to the regents Moray, Lennox, Mar, and Morton, who successively governed Scotland, Elizabeth fortified herself in a great degree against the Catholic confederacy.

GOVERNMENT OF ELIZABETH.

It has already been seen that the liberties of the people were much favoured by the frequent interruptions in the succession to the crown. Whenever one branch of the Plantagenet family displaced another, the new king, feeling himself weak, endeavoured to strengthen his title by procuring a parliamentary enactment in support of it. It thus became established as a regular principle in the English government, that the people who were represented in parliament had something to say in the appointment of their king. A considerable change, however, had taken place since the accession of Henry VII. The great power acquired by that king, through his worldly wisdom and the destruction of the nobility during the civil wars, had been handed down through four successive princes, who inherited the crown by birthright, and did not require to cringe to the people for a confirmation of their title. The parliaments, therefore, were now a great deal more under the control of the sovereign than they had formerly been. From an early period of his reign, Henry VIII. never permitted his parliament to oppose his will in the least. To the various changes of religion under successive sovereigns, the parliaments presented no obstacle. An idea was now beginning to arise, very much through the supremacy which the sovereigns had acquired over the church, that the right of the crown was one derived from God, and that the people had nothing to do with it, except to obey what it dictated to them. Of this notion, no one took so much advantage, or was at so much pains to impress it, as Elizabeth. No doubt her arbitrary measures were generally of a popular nature, yet this does not excuse them in principle; and their ultimate mischief is seen in the attempts of future sovereigns to pursue worse ends upon the same means. Elizabeth's government consisted entirely of herself and her ministers, who were, from the beginning to the end of her reign, the very spirit and essence of the enlightened men of England. Her prime minister was the celebrated Lord Burleigh, by far the most sagacious man who ever acted as a minister in Britain; and all her emissaries to foreign courts were of one complexion—circumspect and penetrating men, ardently devoted to their country, their mistress, and to the Protestant religion.

On the accession of Elizabeth, the two celebrated acts of Supremacy and Conformity were passed, for the purpose of crushing the political influence of the Popish religion; an end which they sufficiently accomplished. By the act of supremacy, all beneficed clergymen, and all holding offices under the crown, were compelled to take an oath abjuring the temporal and spiritual jurisdiction of any foreign prince or prelate, on pain of forfeiting their offices, while any one maintaining such supremacy was liable to heavy penalties. The other statute prohibited any one from following any clergyman who was not of the established religion, under pain of forfeiting his goods and chattels for the first offence, of a year's imprisonment for the second, and of imprisonment during life for the third; while it imposed a fine of a shilling on any one absenting himself from the established church on Sundays and holidays. By means of a court of ecclesiastical commission, which the queen erected, these laws, and others of a more trifling and vexatious nature, were enforced with great severity. It may afford some idea of the barbarity of the age, and

of the terror in which the church of Rome was now held, that, during the reign of Elizabeth, one hundred and eighty persons suffered death by the laws affecting Catholic priests and converts.

WAR IN THE NETHERLANDS.

For more than a century after the Reformation, religion was the real or apparent motive of the most remarkable transactions in European history. It is scarcely necessary to point out that this sentiment, though in general the purest by which human beings can be actuated, is, like all the other higher sentiments of our nature, when offended or shocked, capable of rousing the inferior sentiments into great activity. In the sixteenth and seventeenth centuries, European society was comparatively unenlightened and barbarous; we therefore find that variances of opinion respecting religion were then productive of far fiercer feelings than they are in our own more humane age. The Protestant heresy, as it was termed by the Catholics, was also a novelty, the remote effects of which no man could foretell; it was mingled with political questions, and by some princes was supposed to forebode a general revolt against monarchical authority. We are not therefore to wonder that great cruelties were committed, either by the Catholics in seeking to support the church of Rome, or by the Protestants in endeavouring to insure themselves against a renewal of severities inflicted by the opposite party. Nor is it necessary, in the present age, that the adherents of either faith should retain any feeling of displeasure against the other, on account of barbarities which took their rise in the ignorance and rudeness of a former period, and of which the enlightened of both parties have long since disapproved.

In the Netherlands, which formed part of the dominions of Philip II. of Spain, the reformed faith had made considerable advances. Philip, like other Catholic princes, entertained the idea that this new creed, besides being condemnable as a heresy and an offence against the Deity, tended to make men independent of their rulers. Finding the people obstinate in their professions, he commenced a war with the Netherlanders, for the purpose of enforcing his authority over their consciences. This war lasted about twenty years; for the Netherlanders, though a nation of no great strength, fought like desperate men, and endured the most dreadful hardships rather than submit. The chief leader in this war of liberty was William, Prince of Orange, one of the purest and most courageous patriots that ever breathed. Elizabeth could not help wishing well to the Netherlanders, though for a long time her dread of Spain, then one of the greatest powers in Europe, prevented her from openly assisting them. At the same time, about two millions of the people of France were Protestants, or, as they were then called, Huguenots, who acted also for the general Protestant cause with as much energy as the great strength of the French government would permit. Elizabeth at length, in 1578, extended an open protection to the Netherlanders, excusing herself to Philip by stating her fear that they would otherwise throw themselves into the arms of France. The northern provinces were thus enabled to assert their independence, and to constitute the country which has since been called Holland.

DEATH OF MARY, QUEEN OF SCOTS.

The Catholic powers of the continent formed many schemes for annoying or dethroning Elizabeth; and the imprisoned Scottish queen, or her adherents, were generally concerned in them. The king of Spain, determined at length to make a decisive effort, commenced the preparation of a vast fleet, which he termed the Invincible Armada, and with which he designed to invade the English shores. Elizabeth, her ministers, and people, beheld the preparations with much concern, and their fears were increased by the plots which were incessantly forming amongst her Catholic subjects in behalf of the Queen of Scots. An act was passed declaring that any person, by or for whom any plot should be made against the Queen of England, should be guilty of treason. When, soon after, a gentleman named Babington formed a conspiracy for assassinating Elizabeth and placing Mary on the throne, the latter queen became of course liable to the punishment for treason, although herself innocent. She was subjected to a formal trial in her prison of Fotheringay Castle, and found guilty. Elizabeth hesitated for some time to strike an unoffending and unfortunate person, related to her by blood, and her equal in rank. But at length fears for herself got the better of her sense of justice, and, it may be added, of her good sense, and she gave her sanction to an act which leaves an ineffaceable stain upon her memory. On the 7th of February 1587, Mary, Queen of Scots, was beheaded in the hall of the castle, after an embittered confinement of more than eighteen years.

James VI. was now, after a turbulent minority, in possession of the reins of government in Scotland, but with little real power, being a dependant and pensioner of Elizabeth, and at the same time much controlled by the clergy, who asserted a total independence of all temporal authority, and considered themselves as the subjects alone of the Divine founder of the Christian faith. James made many attempts to assert a control over the church like that enjoyed by the English monarch, and also to introduce an Episcopal hierarchy, but never could attain more than a mere shadow of his object. The chief influence he possessed arose in fact from his being regarded as heir presumptive to the English crown.

SPANISH ARMADA—REBELLIONS IN IRELAND.

In 1588, the Spanish Armada, consisting of 130 great vessels, with 20,000 land forces on board, set sail against England, while 34,000 more land forces prepared to join from the Netherlands. Amidst the consternation which prevailed in England, active measures were taken to defend the country; thirty vessels prepared to meet the Armada, and another fleet endeavoured to block up the Netherlands forces in port. The command was taken by Lord Howard of Effingham. Troops were also mustered on land to repel the invaders. The English fleet attacked the Armada in the Channel, and was found to have a considerable advantage in the lightness and manageableness of the vessels. As the Armada sailed along, it was infested by the English in the rear, and by a series of desultory attacks, so damaged as to be obliged to take refuge on the coast of Zealand. The Duke of Parma now declined to embark the Netherlands forces, and it was resolved by the admiral, that they should return to Spain by sailing round the Orkneys, as the winds were contrary to their passage directly back. Accordingly they proceeded northward, and were followed by the English fleet as far as Flamborough Head, where they were terribly shattered by a storm. Seventeen of the ships, having 5000 men on board, were cast away on the Western Isles and the coast of Ireland. Of the whole Armada, fifty-three ships only returned to Spain, and these in a wretched condition. The seamen, as well as the soldiers who remained, were so overcome with hardships and fatigue, and so dispirited by their discomfiture, that they filled all Spain with accounts of the desperate valour of the English, and of the tempestuous violence of that ocean by which they were surrounded.

Though the Protestant church had meanwhile been established in Ireland, the great bulk of the people continued to be Roman Catholics. The native rudeness of the people and their chiefs, and the discontent occasioned by what was considered as a foreign church establishment, rendered the country turbulent and difficult to govern. Sir John Perrot, the deputy, proposed to improve the country by public works and English laws; but it was thought injurious to England to improve the condition of Ireland. A series of rebellions under chiefs named O'Neill was the consequence, and the English

government was maintained with great difficulty, and at an enormous expense. The rebellion of Hugh O'Neill, Earl of Tyrone, was particularly formidable. The English officers were at first unsuccessful, and met with some serious defeats. In 1599, Tyrone gained so great a victory, that the whole province of Munster declared for him. He then invited the Spaniards to make a descent on Ireland, and join him. The queen sent over her favourite, the Earl of Essex, with 20,000 men; but he did not proceed with vigour, and soon after found it necessary to return to England to justify himself. Next year Tyrone broke the truce he had formed with Essex, overran the whole country, and acted as sovereign of Ireland. If Spain had at this time given him the support he asked, Ireland might have been dissevered from the English crown.

Elizabeth now selected as her deputy for Ireland, Blount, Lord Mountjoy, who was in every respect better fitted than Essex to conduct such a warfare. As a preliminary step, this sagacious officer introduced jealousy and disunion among the Irish chiefs. The very celerity of his movements tended to dispirit the insurgents. In 1601, six thousand Spaniards landed in Kinsale harbour, for the purpose of supporting the Irish. Mountjoy immediately invested the place, and prevented them from acting. Tyrone marched from the south of Ireland to their relief, and was met and overthrown by a much inferior English force, after which Kinsale was surrendered. About the time when Elizabeth died (1603), Tyrone submitted, and Ireland was once more reduced under the authority of the English crown.

CONCLUSION OF THE REIGN OF ELIZABETH.

It is remarkable, that while Elizabeth increased in power and resources, she became more noted for feminine weaknesses. In her early years she had shown a stoicism, and superiority to natural affections, not usually observed in women. But in her old age, she became both volatile and susceptible to an extraordinary degree; so that the hand which she had withheld in her younger days from the noblest princes of Europe, seemed likely to be bestowed in her old age upon some mere court minion. Her favourite in middle life was Robert, Earl of Leicester, a profligate and a trifler. In her latter days she listened to the addresses of the Earl of Essex, a young man of greater courage and better principle, but also headstrong and weak. Essex, who had acquired popularity by several brilliant military enterprises, began at length to assume an insolent superiority over the queen, who was on one occasion so much provoked by his rudeness as to give him a hearty box on the ear. Notwithstanding all his caprices, presumption, and insults, the queen still dotingly forgave him, until he at length attempted to raise an insurrection against her in the streets of London, when he was seized, condemned, and after much hesitation, executed (February 25, 1601).

Elizabeth, in at last ordering the execution of Essex, had acted upon her usual principle of sacrificing her feelings to what was necessary for the public cause; but in this effort, made in the sixty-eighth year of her age, she had miscalculated the real strength of her nature. She was observed from that time to decline gradually in health and spirits.

About the close of 1601, she fell into a deep hypochondria or melancholy. She could scarcely be induced to have herself dressed, and at length became so much absorbed by her sorrow as to refuse sustenance, and sat for days and nights on the floor, supported by a few cushions, brought to her by her attendants. On the 24th of March 1603, she expired, after a reign of nearly forty-five years, during which England advanced—politically and commercially—from the condition of a second-rate to that of a first-rate power, and the Protestant religion was established on a basis from which it could never afterwards be shaken.

The reign of Elizabeth saw the commencement of the naval glory of England. Down to the reign of Henry VII., there was no such thing as a navy belonging to the public, and the military genius of the people was devoted exclusively to enterprises by land. The rise, however, of a commercial spirit in Europe, which in 1492 had caused the discovery of America, and was again acted upon by the scope for adventure which that discovery opened up, had latterly caused great attention to be paid to nautical affairs in England. Englishmen of all ranks supported and entered into enterprises for discovering unknown territories; and under Drake, Cavendish, Raleigh, and Frobisher, various expeditions of less or more magnitude were sent out. The colonies of North America were now commenced. Amongst the exertions of private merchants, our attention is chiefly attracted by the commencement of the northern whale-fishery, the cod-fishery of Newfoundland, and the less laudable slave-trade in Africa. When hostilities with Spain became more open, the English commanders made many successful attacks upon her colonies in the West Indies, and also upon the fleets of merchant vessels which were employed to carry home the gold, and other almost equally valuable products of the New World, to the Spanish harbours. These attacks were now made in a more systematic manner, and with more effect, as a revenge for the affair of the Armada. It may be said that the dominion of Britain over the seas was perfected almost in a single reign; a power which has been of such advantage to the country, both in protecting its commerce, and keeping it secure from foreign invasion, that its origin would have conferred everlasting lustre on this period of British history, even although it had not been characterised by any other glorious event.

The chief articles exported from England to the continent were wool, cloth, lead, and tin: formerly these had been sent in vessels belonging to the Hanse Towns—certain ports of the north of Europe, possessing great privileges—but now English vessels were substituted for this trade. Birmingham and Sheffield were already thriving seats of the hardware manufacture, and Manchester was becoming distinguished for making cottons, rugs, and friezes. Stocking-weaving and the making of sailcloth, serge, and baize, took their rise in this reign. The progress of other arts was much favoured by the bloody persecutions in the Netherlands, which drove into England great numbers of weavers, dyers, cloth-dressers, and silk-throwers. Amongst the wealthier classes, the wearing of handsome apparel and of gold ornaments and jewellery, made a great advance. Coaches were introduced, but for a time thought only fit for the use of ladies. Great improvements were made in the building of houses. Theatrical amusements were begun, and attained great vogue, though only in London. The smoking of tobacco was introduced by Sir Walter Raleigh, who became acquainted with the plant in Virginia. At the end of Elizabeth's reign, the population of London was about 160,000, or a tenth of what it now is; and the whole kingdom probably contained about 5,000,000 of inhabitants.

THE STUARTS—JAMES I.

The successor of Elizabeth, by birthright, was JAMES VI. OF SCOTLAND (styled JAMES I. OF ENGLAND), who was now arrived at the prime of life, and had been married for some years to the Princess Anne of Denmark, by whom he had two sons, Henry and Charles, and one daughter named Elizabeth. James immediately removed to London, and assumed the government of England, while his native kingdom, though thus united under the same sovereignty, still retained its own peculiar institutions. At the suggestion of the king, who wished to obliterate the distinction of the two countries, the common name of *Great Britain* was now conferred upon them. King James was an oddity in human character. His person was naturally feeble, particularly in the limbs, which were scarcely sufficient to support his weight. He had great capacity for learning, some acuteness, and a considerable share of wit; but was pedantic, vain, and weak. He believed kings to be the

deputies of God, and accountable to God alone for their actions. He was equally disposed with Elizabeth to govern despotically, or according to his own will; but he wanted the vigour and the tact for securing popularity which enabled his predecessor to become so much the mistress of her subjects.

Notwithstanding the energy of Elizabeth, the popular spirit had gradually been acquiring force in her reign. It was chiefly seen in the acts of the Puritans, a religious party, who wished to make great reforms in the church, both in its government and its worship, and who, from the fervour of their devotions and the strictness of their manners, might be likened to the Presbyterians of Scotland. King James found considerable difficulty at the very first in controlling this party and evading their demands. He was no less troubled, on the other hand, by the Catholics, who, recollecting his mother Mary, conceived that he would be inclined to make matters more easy to them in England. Upon the whole, there were such difficulties in the way, as, to have steered successfully through them, would have required a wiser instead of a weaker ruler than Elizabeth.

GUNPOWDER PLOT.

The disappointment of the Catholics on finding that the severe laws against them were not to be relaxed, led to a conspiracy on the part of a few gentlemen of that persuasion, of whom the chief was William Catesby, a person of dissolute habits. It was arranged that, on the day of the meeting of Parliament, November 5, 1605, the House of Lords should be blown up by gunpowder, at the moment when the King, Lords, and Commons, were all assembled in it, thus destroying, as they thought, all their chief enemies at one blow, and making way for a new government which should be more favourable to them. Accordingly, thirty-four barrels of powder were deposited in the cellars beneath the House, and a person named Guy Fawkes was prepared to kindle it at the proper time. The plot was discovered, in consequence of the receipt of a letter by Lord Monteagle, warning him not to attend the meeting of Parliament. An investigation took place during the night between the 4th and 5th of November, when the gunpowder was discovered, and Fawkes taken into custody. He confessed his intentions; and the rest of the conspirators fled to the country, where most of them were cut to pieces in endeavouring to defend themselves. Notwithstanding the atrocious character of this plot, the king could never be induced to take advantage of it, as most of his subjects desired, for the purpose of increasing the persecution of the Catholic party: he probably feared that new severities might only give rise to other attempts against his life.

PLANTATIONS IN IRELAND.

The state in which the king found Ireland at his accession, afforded an opportunity for commencing a more generous policy in reference to that country, and introducing regulations favourable to internal improvement. Previously to this reign, the legislative authority of the English government was confined to the small district called the 'Pale,' while the rest was governed by native sovereigns or chiefs, whose connection with the king of England was merely that of feudal homage, which did not prevent them from making wars or alliances with each other. Subject to depredations from these powerful barons, the native Irish, from a very early period, petitioned for the benefit of the English laws; but the Irish Parliament, which was composed of the English barons, was never at a loss for the means of preventing this desirable measure from being effected. James was in reality the first king who extended the English law over the whole of Ireland, by making judicial appointments suited to the extent of the country. This he was enabled to do, by the recent wars having put the country more completely in his power than it had been in that of any former monarch. He began by extending favour to the Irish chiefs, not excepting Tyrone. He passed an act of oblivion and indemnity by which all persons who had committed offences, coming to the judges of assize within a certain day, might claim a full pardon. At the same time, toleration was virtually refused to the Catholic persuasion, and much discontent therefore still existed. Some of the chieftains, having conspired against the crown, were attainted, and their lands were given to English settlers, with a view to improving the population of the country by an infusion of civilised persons. But this experiment, though well-meant, was managed in a partial spirit, and gave rise to much injustice. In 1613, the first Irish Parliament was held in which there were any representatives of places beyond the Pale.

THE KING'S CHILDREN—THE SPANISH MATCH.

In 1612, the king had the misfortune to lose his eldest son, Henry, a youth of nineteen, who was considered as one of the most promising and accomplished men of the age. The second son, Charles, then became the heir-apparent, and James was busied for several years in seeking him out a suitable consort. The Princess Mary of Spain was selected, a match which could not be popular, considering that the young lady was a Catholic, and of a family who had long been the enemies of England. The prince, attended by the Duke of Buckingham, made a romantic journey in disguise to Madrid to push the match; but a quarrel between the British and Spanish ministers led to its being broken off, and to a bloody war between the two nations.

Elizabeth, the only remaining child of the king, was married, in 1613, to Frederick, Prince Palatine of the Rhine, who was afterwards so unfortunate as to lose his dominions, in consequence of his placing himself at the head of the Bohemians, in what was considered as a rebellion against his superior, the Emperor of Germany. This discrowned pair, by their youngest daughter Sophia, who married the Duke of Brunswick, were the ancestors of the family which now reigns in Britain.

FEATURES OF JAMES I.'S GOVERNMENT.

The reign of James I. was not marked by what are called great events. This was greatly owing to his timid character, which induced him to maintain peace, at whatever sacrifice, throughout the greater part of his reign. The prime leaders of his government were youthful favourites, who possessed no merit but personal elegance. Experienced statesmen, brave soldiers, and learned divines, had to bow to these dissolute youths, if they wished to remain, and still more if they hoped to advance, in the royal favour. Even Bacon, the noblest intellect of the age, and who, by the result of his studies, has done more than almost any other man to promote the progress of knowledge, is found to have attached himself to the minion Duke of Buckingham, for the purpose of improving his interest at court.

In despotic countries, the vices of the court often corrupt all classes; but it was otherwise at that period in Britain. The country gentlemen, and the merchants in the incorporated towns, had privileges which the court dared not too often violate, and a feeling of rectitude and independence was encouraged among these classes, which the statesmen of the age too much overlooked. The House of Commons gave frequent resistance to the court, and often compelled James to yield, at the very moment when he was preaching his doctrines of divine right. In his first Parliament, they took into consideration several grievances, such as *purveyance*, a supposed right in the officers of the court to seize what provisions they pleased, at any price, or at no price; another was the right of granting *monopolies*, which had become a source of revenue to the court by cheating the country, certain persons having the monopoly of certain manufactures and articles of domestic consumption, which they were allowed to furnish at their own prices. The Commons likewise remonstrated against pluralites in the church, and against a new set of canons which the king and the church tried to force on the nation without their consent. In 1614, they

threatened to postpone any supply till their grievances were redressed. The king, in his turn, threatened to dissolve them if they did not immediately grant a supply; and they allowed him to take his course, which did not fill his coffers. These, and many other instances of bold resistance, should have given warning to the court. They were the shadows of coming events, and attention to them might have saved the bloodshed and confusion of the succeeding reign.

English literature, which first made a decisive advance in the reign of Elizabeth, continued to be cultivated with great success in the reign of King James. The excellence of the language at this time as a medium for literature, is strikingly shown in the translation of the Bible now executed. It is also shown in the admirable dramatic writings of Shakspeare, and in the valuable philosophic works of Bacon. The inductive philosophy, made known by the last writer—namely, that mode of reasoning which consists in first ascertaining facts, and then inferring conclusions from them—reflects peculiar lustre on this period of our history. Very great praise is also due to Napier of Morchiston, in Scotland, for the invention of *logarithms*, a mode of calculating intricate numbers, essential to the progress of mathematical science.

CHARLES I.—HIS CONTENTIONS WITH THE HOUSE OF COMMONS.

King James died in March 1625, in the fifty-ninth year of his age, and was succeeded by his son CHARLES, now twenty-five years of age. One of the first acts of the young king was to marry the Princess Henrietta Maria, daughter of Henry IV. of France, and a Catholic. This was an unfortunate step for the House of Stuart, for the two eldest sons of the king and queen, though educated as Protestants, were influenced in some measure by the religious creed of their mother, so that they ultimately became Catholics; and this, in the case of the second son, James II., led to the family being expelled from the British throne.

After breaking off the proposed match with the Princess Mary of Spain, Britain eagerly threw itself into a war with that country, which was still continued. To supply the expenses of that contest, and of a still more unnecessary one into which he was driven with France, the king applied to Parliament, but was met there with so many complaints as to his government, and such a keen spirit of popular liberty, that he deemed it necessary to revive a practice followed by other sovereigns, and particularly Elizabeth, of compelling his subjects to grant him gifts, or, as they were called, *benevolences*, and also to furnish ships at their own charge, for carrying on the war. Such expedients, barely tolerated under the happy reign of Elizabeth, could not be endured in this age, when the people and the Parliament were so much more alive to their rights. A general discontent spread over the nation. The Commons, seeing that if the king could support the state by self-raised taxes, he would soon become independent of all control from his Parliaments, resolved to take every measure in their power to check his proceedings. They also assailed him respecting a right which he assumed to imprison his subjects upon his own warrant, and to detain them as long as he pleased. Having made an inquiry into the ancient powers of the crown, before these powers had been vitiated by the tyrannical Tudors, they embodied the result in what was called a PETITION OF RIGHT, which they presented to him as an ordinary bill, or rather as a second Magna Charta, for replacing the privileges of the people, and particularly their exemption from arbitrary taxes and imprisonment, upon a fixed basis. With great difficulty Charles was prevailed upon to give his sanction to this bill (1628); but his disputes with Parliament soon after ran to such a height, that he dissolved it in a fit of indignation, resolving never more to call it together. About the same time his favourite minister, the Duke of Buckingham, was assassinated at Portsmouth, and Charles resolved thenceforward to be in a great measure his own minister, and to trust chiefly for the support of his government to the English hierarchy, to whose faith he was a devoted adherent, and who were, in turn, the most loyal of his subjects. His chief counsellor was Laud, Archbishop of Canterbury, a man of narrow and bigoted spirit, and who made it his duty rather to increase than to diminish the ceremonies of the English church, although the tendency of the age was decidedly favourable to their diminution. For some years Charles governed the country entirely as an irresponsible despot, levying taxes by his own orders, and imprisoning such persons as were obnoxious to him, in utter defiance of the Petition of Right. The Puritans, or church reformers, suffered most severely under this system of things. They were dragged in great numbers before an arbitrary court called the Star-Chamber, which professed to take cognisance of offences against the king's prerogative, and against religion; and sometimes men venerable for piety, learning, and worth, were scourged through the streets of London, and had their ears cut off, and their noses slit, for merely differing in opinion, on the most speculative of all subjects, with the king and his clergy. The great body of the people beheld these proceedings with horror, and only a fitting occasion was wanted for giving expression and effect to the public feeling.

It is to be observed, that none of the taxes imposed by Charles were in themselves burdensome; the country was then in a most prosperous condition, and the taxes far less in proportion to every man's means than they have ever since been. It was only to the principle of their being raised without Parliamentary sanction, which had formerly been so necessary a control on the royal power, that the people were disposed to resist them. It may easily be supposed, that though there might be a general disposition to resistance, the most of individuals would not like to be the first to come forward for that purpose, as, in such an event, they would have been sure to experience the severest persecution from the court. At length, John Hampden, a gentleman of Buckinghamshire, resolved to undergo any personal inconvenience rather than pay his twenty shillings of ship-money. The case was tried in the Exchequer (1637); and as the judges were then dismissible at the royal pleasure, and of course the humble servants of the king in everything, Hampden lost his cause. He roused, however, more effectually than ever, the attention of the people to this question, and means were not long wanting to check the king in his unfortunate career.

TROUBLES IN SCOTLAND—THE NATIONAL COVENANT.

An attempt had been made by King James to introduce the Episcopal church into Scotland, because it was thought dangerous to the English church that a form of worship resembling that of the Puritans should be permitted to exist in any part of the king's dominions. The same object was prosecuted with greater zeal by King Charles; and although the people were generally adverse to it, he had succeeded, after a visit which he paid to the country in 1633, in settling thirteen bishops over the church, by whom he hoped to govern the clergy as he did those of England. But when he attempted, in 1637, to introduce a new Book of Common Prayer into the Scotch churches, the spirit of the people could no longer be kept within bounds. On the Liturgy being opened in the principal church at Edinburgh, the congregation rose in a violent tumult, and threw their clasped Bibles, and the very stools they sat on, at the minister's head; and it was not till the whole were expelled by force, that the worship was permitted to proceed. It was found necessary, by the Scottish state-officers, to withdraw the obnoxious Liturgy, till they should consult the king, who, not dreading any mischief, gave orders that it should be used as he had formerly directed, and that the civil force should be employed in protecting the clergymen. It was found quite impossible to obey such an order in the face of a united people, who, by committees assembled at Edinburgh, representing the nobles, minis-

ters, gentry, and burghers, endeavoured to awe the king into an abandonment of the late innovations. Charles endeavoured by every means in his power to avoid such a humiliation, which he believed would give immense force to the innovators in England. But the Scotch, when they found him hesitating, bound themselves (March 1638), under a bond called the *National Covenant*, which was signed by nineteen-twentieths of the adult population, to resist their sovereign in every attempt he might make to bring in upon them the errors of Popery—for such they held to be the forms of worship and ecclesiastical government which Charles had lately imposed upon their church. The king sent his favourite Scotch counsellor, the Marquis of Hamilton, to treat with his northern subjects; but nothing would satisfy them but the calling of a General Assembly of the church, for the purpose of settling all disputes. Charles, though he saw that this was only an appeal to the heads of the party by which he had been opposed, consented to the proposal, for the purpose of gaining time, that he might make warlike preparations against his refractory people.

The Assembly met at Glasgow in November, and, as might have been expected, formally purified the church from all the late innovations, excommunicating the bishops, and declaring the government of the clergy to rest, as formerly, in the General Assembly, which consisted of a selection of two clergymen from each presbytery, with a mixture of lay elders, and nothing to control its proceedings but their interpretation of the will of the divine founder of the Christian religion. Early in the succeeding year, the king, with great difficulty, collected an army of 20,000 men, whom he led to the border of Scotland, for the purpose of reducing these despisers of his authority. The Scotch, however, strengthened by devotional feeling, and a certainty that the English in general were favourable to their cause, formed an army equal in number, which was placed under the command of General Alexander Leslie, an officer who had served with distinction in the long Protestant war carried on against the Emperor of Germany. The Scottish army was encamped on Dunse Law, a hill overlooking the Border, where the duties of military parade were mingled with prayers and preachings, such as were never before witnessed in a camp. The king seeing the wavering of his own men, and the steadfastness of the Scotch, was obliged to open a negotiation, in which it was agreed to disband both armies, and to refer the disputes once more to a General Assembly and a Scottish Parliament.

The king now adopted a new policy with the turbulent people of Scotland. Having formerly gained over some of the English patriots, he thought he might be equally successful with the lords of the Covenant, whom he therefore invited to attend him at Berwick, where the late negotiations had been conducted. A few obeyed the summons; but he failed with all except the Earl (afterwards Marquis) of Montrose, a noble of vigorous genius, whose ambition had been wounded by not having so high a place in the counsels of his countrymen as he thought he deserved. In the new General Assembly and Parliament (1640), the votes were equally decisive against Episcopacy; and though Charles prorogued the latter body before it had completed its proceedings, it nevertheless continued sitting, and voted every measure which it thought necessary. The king collected a second army, and in order to raise money for a second expedition against the Scots, was reduced to the necessity of calling an English Parliament, the first that had met for eleven years. It met (April 13), but, without listening for a moment to a request for subsidies, began to discuss the national grievances. Finding Parliament quite intractable, the king dissolved it (May 5), and endeavoured to obtain supplies in other quarters. A convocation of the clergy granted him £20,000 per annum for the next six years. The nobility and gentry advanced £300,000; but when the city of London was asked for a loan of £200,000, it absolutely refused.

The Scots did not, on this occasion, wait to be attacked by the king, but in August 1640, marched into the north of England, in the expectation of being supported in their claims by the English people in general. A victory gained by them at Newburnford, and their taking possession of Newcastle, together with the manifest disaffection of his own troops, made it necessary that Charles should once more resort to negotiation. It was agreed at a council of peers that all the present dissensions should be referred to the Parliaments of the two countries, the Scottish army being in the meantime kept up on English pay, till such time as they were satisfied with the state of their affairs.

THE LONG PARLIAMENT—THE IRISH REBELLION.

The English Parliament met in November, and immediately commenced a series of measures for effectually and permanently abridging the royal authority. There was even a party who, provoked by the late arbitrary measures, contemplated the total abolition of the monarchy, and the establishment of a republic. The first acts of the Parliament had little or no immediate reference to Scotland. The Earl of Strafford was impeached of treason against the liberties of the people, and executed (May 12, 1641), notwithstanding a solemn promise made to him by the king that he should never suffer in person or estate. Archbishop Laud was impeached and imprisoned, but reserved for future vengeance. The remaining ministers of the king only saved themselves by flight. Some of the judges were imprisoned and fined. The abolition of Episcopacy was taken into consideration. The Catholics fell under a severe persecution; and even the person of the queen, who belonged to this faith, was not considered safe.

It was not till August 1641, when the English Parliament had gained many of its objects, that they permitted the treaty of peace with Scotland to be fully ratified. They then gratified the troops not only with their full pay, at the rate of £850 a day, but with a vote of no less a sum than £300,000 besides, of which £80,000 was paid down, as an indirect way of furnishing their party with the means of future resistance. The king, on his part, also took measures for gaining the attachment of this formidable body of soldiery, and of the Scottish nation in general. In Edinburgh, which he visited in August, he squared his conduct carefully with the rigour of Presbyterian manners. In the Parliament he was exceedingly complaisant: he readily ratified all the acts of the preceding irregular session; he yielded up the right of appointing the state officers of Scotland; and he ordained that the Scottish Parliament should meet once every three years without regard to his will—all of which were points of the greatest importance. The men who had acted most conspicuously against him in the late insurrections now became his chief counsellors, and he seemed to bestow favours upon them exactly in proportion to their enmity. He created General Leslie Earl of Leven, putting on his coronet with his own hand. The Earl of Argyle, who had been the chief political leader of the Covenanters, was made a marquis. Many others received promotions in the peerage. The offices of state were distributed amongst them. Thus the affections of the Scots were in a manner set up to auction between the king and his English Parliament, and from both did they receive considerable advantages.

But while thus intriguing with the Covenanting leaders, Charles also kept up a correspondence with a royalist party which had been embodied by the Earl of Montrose. This nobleman was now suffering confinement in Edinburgh Castle for his exertions in favour of the king. An obscure conspiracy which he formed against three of the chief popular nobles, Argyle, Hamilton, and Lanark, as a preliminary step to the re-establishment of the royal power, became known at this time, and did some injury to the king's cause in both countries. After spending about three months in Edinburgh, Charles was called away in consequence of intelligence which reached him from Ireland.

The cruel policy already mentioned, by which large portions of Ireland were depopulated, and then planted with colonies of English and Scotch settlers had been continued during the reign of Charles. In addition to this and other local causes of complaint, the state of religion was one which pervaded nearly the whole country, and was always becoming more and more important. Though the reformed faith had been established for nearly a century, it had made little progress except among the English settlers. The greater part of the nobility, and also of the lower orders, were still attached to the ancient creed; and a Catholic hierarchy, appointed by the Pope, and supported by the people, enjoyed as much respect and obedience as when that religion was countenanced by the state. The refusal of the Catholics to take the oath of supremacy, which acknowledged the king to possess a right which their faith taught them to belong to the Pope, necessarily excluded them from all branches of the public service. There were also penal laws against the profession of Catholicism, and a severe court of Star-Chamber to carry these into execution. Thus situated, the Irish Catholics had two powerful motives to mutiny—a confidence in their numbers, and a constant sense of suffering under the government.

In 1633, the Earl of Strafford was appointed viceroy of Ireland. His government was vigorous, and those institutions which he thought proper to patronise flourished under it; but his great aim was to make the king absolute, and he rather subdued than conciliated the popular spirit. When summoned in 1640 to attend the king in England, he left the Irish government in the hands of Sir William Parsons and Sir John Borlase, as lords justices. Immediately after his departure, the spirit which he thought he had quelled began to reappear, being encouraged both by his absence, and by the success which the Scottish Covenanters had experienced in a war against religious restraint. A conspiracy, involving most of the country without the Pale, and including many persons within it, was formed chiefly under the direction of a gentleman named Roger Moore, who possessed many qualities calculated to endear him to the people. Some circumstances excited the suspicion of the Protestants; and among others, the return of several officers who had been in the service of the king of Spain, under pretence of recruiting for the Spanish army. But the apparent tranquillity of the country baffled all scrutiny.

The 23d of October 1641, being a market-day, was fixed on for the capture of Dublin Castle. During the previous day, nothing had occurred to alarm the authorities. In the evening of the 22d, the conspiracy was accidentally discovered, and measures were taken to save Dublin; but a civil war raged next morning in Ulster, and speedily spread over the country.

The design of Sir Phelim O'Neill, and the other leaders of this insurrection, was simply political. They conceived the time a good and opportune one for striking a blow against the government, as the Scots had successfully done; and their conduct was in the outset characterised by lenity. They could not, however, allay the hatred with which the Catholics looked upon their adversaries; and a spirit of revenge broke out among their followers, which was aggravated to cruel outrage, when they heard that the conspiracy was discovered in Dublin. The spirit of retaliation was let loose, and political wrongs, unfeelingly inflicted, were, as is often the case, ferociously avenged. The massacre of an immense number of Protestants held forth an awful lesson of the effects which oppressive laws produce on the human passions. The government rather aggravated than alleviated the evil, by offering the estates of all in rebellion to those who should aid in reducing them to obedience. This drove the insurgents to desperation, and postponed the complete extinction of the war for several years. It is to be remarked, that though the Irish were struggling for both national and religious freedom, they gained no sympathy from the patriots of Britain, who, on the contrary, urged the king to suppress the rebellion, being afraid that a religious toleration in Ireland would be inconsistent with the same privilege in their own country. The Scottish Covenanters, themselves so recently emancipated from a restraint upon their consciences, contributed ten thousand troops to assist in restoring a similar restraint upon the Irish!

THE CIVIL WAR.

It was generally allowed by moderate people, that in the autumn of 1641, at which time the labours of the Parliament had continued one year, the king had granted redress of all the abuses for which the earlier part of his reign, and the British constitution in general, were blameable. If he could have given a guarantee that he never would seek to restore any of these abuses, or attempt to revenge himself upon the men who had been chiefly concerned in causing him to give up, there would have been no further contention. Unfortunately, the character of the king for fidelity to his engagements was not sufficiently high to induce the leaders of the House of Commons to depend upon him: they feared that, if they once permitted him to resume his authority, there would be no longer any safety for them; and they deemed it necessary that things should be prevented from falling into their usual current. They therefore prepared a paper called *The Remonstrance*, containing an elaborate view of all the grievances that had ever existed, or could now be supposed to exist; and this they not only presented to the king, but disseminated widely among the people, with whom it served to increase the prevailing disaffection.

From this time it was seen that the sword could alone decide the quarrel between the king and the Parliament. Charles made an unsuccessful attempt (January 4, 1642) to seize six of the most refractory members, for the purpose of striking terror into the rest. This served to widen still further the breach. In the early part of 1642, the two parties severally employed themselves in preparing for war. Yet, even now, the king granted some additional concessions to his opponents. It was at last, upon a demand of the Parliament for the command of the army—a privilege always before, and since, resting with the crown—that he finally broke off all amicable intercourse. He now retired with his family to York.

The Parliament found its chief support in the mercantile classes of London and of the eastern coast of England, which was then more devoted to trade than the west, and in the Puritan party generally, who were allied intimately with the Presbyterians of Scotland, if not rapidly becoming assimilated with them. Charles, on the other hand, looked for aid to the nobility and gentry, who were able to bring a considerable number of dependants into the field. The Parliamentary party was by the other styled *Roundheads*, in consequence of their wearing short hair; while the friends of the Parliament bestowed upon their opponents the epithet of *Malignants*. The Royalists were also, in the field, termed Cavaliers, from so many of them being horsemen. On the 25th of August 1642 the king erected his standard at Nottingham, and soon found himself at the head of an army of about ten thousand men. The Parliament had superior forces, and a better supply of arms; but both parties were very ignorant of the art of war. The king commanded his own army in person, while the Parliamentary forces were put under the charge of the Earl of Essex.

The first battle took place, October 23, at Edgehill, in Warwickshire, where the king had rather the advantage, though at the expense of a great number of men. He gained some further triumphs before the end of the campaign, but still could not muster so large an army as the Parliament. During the winter, the parties opened a negotiation at Oxford; but the demands of the Parliament being still deemed too great by the king, it came to no successful issue.

Early in the ensuing season, the king gained some considerable advantages; he defeated a Parliamentary

army under Sir William Waller at Stratton, and soon after took the city of Bristol. It only remained for him to take Gloucester, in order to confine the insurrection entirely to the eastern provinces. It was even thought at this time that he might have easily obtained possession of London, and thereby put an end to the war. Instead of making such an attempt, he caused siege to be laid to Gloucester, which the army of Essex relieved when it was just on the point of capitulating. As the Parliamentary army was returning to London, it was attacked by the royal forces at Newbury, and all but defeated. Another section of the royal army in the north, under the Marquis of Newcastle, gained some advantages; and, upon the whole, at the close of the campaign of 1643, the Parliamentary cause was by no means in a flourishing condition.

In this war there was hardly any respectable military quality exhibited besides courage. The Royalists used to rush upon the enemy opposed to them, without any other design than to cut down as many as possible, and when any part of the army was successful, it never returned to the field while a single enemy remained to be pursued; the consequence of which was, that one wing was sometimes victorious, while the remainder was completely beaten. The Parliamentary troops, though animated by an enthusiastic feeling of religion, were somewhat steadier, but nevertheless had no extensive or combined plan of military operations. The first appearance of a superior kind of discipline was exhibited in a regiment of horse commanded by Oliver Cromwell, a gentleman of small fortune, who had been a brewer, but was destined, by great talent, hypocrisy, and address, joined to an unrelenting disposition, to rise to supreme authority. Cromwell, though himself inexperienced in military affairs, showed from the very first a power of drilling and managing troops, which no other man in either army seemed to possess. Hence his regiment soon became famous for its exploits.

SOLEMN LEAGUE AND COVENANT.

The Royal successes of 1643 distressed alike the English Parliament and the Scottish nation, who now began to fear the loss of all the political meliorations they had wrested from the king. The two Parliaments therefore entered, in July, into a *Solemn League and Covenant*, for prosecuting the war in concert, with the view of ultimately settling both church and state in a manner consistent with the liberties of the people. In terms of this bond, the Scots raised an army of twenty-one thousand men, who entered England in January 1644; and on the 1st of July, in company with a large body of English forces, overthrew the king's northern army on Long Marston Moor.

The conduct of the Scottish nation in this transaction was not unexceptionable. They had been gratified in 1641 with a redress of every grievance they could name; since which time the king had not given them the least cause of complaint. In now raising war against him, they had no excuse but the very equivocal one, that it was necessary to guard against the possibility of his afterwards being able to injure them. They were also acting on English pay, a proceeding not very consistent with their pretensions to independence. The mainspring of their policy was a hope of being able to establish the Presbyterian religion in England. The Episcopal church being now abolished, divines were nominated by both nations to meet at Westminster, in order to settle a new form of worship and church government; and after a protracted course of deliberation, it was agreed that the Presbyterian system should be adopted, though in England it was provided that the new church should not have any connection with or influence over the state.

The defeat at Long Marston was severely felt by the king. He gained a victory over Waller at Copredy Bridge, and caused Essex's army to capitulate in Cornwall (September 1); but in consequence of a second fight at Newbury (October 27), in which he suffered a defeat, he was left at the end of the campaign with greatly diminished resources. A new negotiation was commenced at Uxbridge; but the terms asked by the Parliament were so exorbitant, as to show no sincere desire of ending the war.

In truth, though the Presbyterian party were perhaps anxious for peace, there was another party, now fast rising into importance, who were actuated by no such wishes. These were the Independents, a body of men who wished to see a republic established in the state, and all formalities whatever removed from the national religion. Among the leaders of the party was Oliver Cromwell, whose mind seems to have already become inspired with lofty views of personal aggrandisement. This extraordinary man had sufficient address to carry a famous act called the *Self-Denying Ordinance*, which ostensibly aimed at depriving all members of the legislature of commands in the army, but had the effect only of displacing a few noblemen who were obnoxious to his designs. He also carried an act for modelling the army anew, in which process he took care that all who might be expected to oppose his views should be excluded. It was this party more particularly that prevented any accommodation taking place between the king and his subjects.

MONTROSE'S CAREER IN SCOTLAND.

While the negotiation was pending, the Marquis (formerly Earl) of Montrose produced a diversion in Scotland in favour of the king. Having got 1500 foot from Ireland, to which he added a few Perthshire Highlanders, he descended upon the Lowlands, and on the 1st of September (1644) gained a complete victory over a larger and better-armed force at Tippermuir. At Aberdeen, whither he went for the purpose of increasing his army, he gained another victory over a superior body of Covenanters. He was then pursued by a third army, under the Marquis of Argyle, and after some rapid movements, seemed to dissolve his forces in the Highlands. Ere his enemies were aware, he burst in the middle of winter into the country of his great rival Argyle, which he did not leave till he had made it a desert. Finding himself timidly followed by the marquis, at the head of a large body of the clan Campbell, he turned suddenly, and falling upon them at Inverlochy (February 2, 1645), gained a complete victory. He then moved along the eastern frontier of the Highlands, where he found himself opposed by a fourth army under General Baillie. After sacking the town of Dundee, and eluding Baillie's troops, he encountered at Aldearn, in Nairnshire (May 4), a greatly superior force, which he also overthrew. Then turning upon Baillie, whom he met at Alford, in Aberdeenshire (July 2), he gained a fifth victory, almost as complete as any of the rest.

In all these battles Montrose carried everything before him by the spirit of his first onset, and the slaughter was in general very great. He now descended to the Lowlands, and at Kilsyth, near Glasgow, was opposed by an army of 6000 men, whom the insurgent government at Edinburgh had hastily assembled from Fife and Perthshire. These, with a much smaller force, he also defeated (August 15), killing great numbers in the pursuit. The committees of church and state then broke up and left the kingdom, leaving him in appearance its sole master. His successes had in the meantime given the king hopes of carrying on the war with success; but Montrose had in reality gained no sure advantages. Besides his small army of mingled Irish and Highlanders, there was hardly any portion of the nation who did not regard him as only a great public enemy. While lying with a diminished force at Philiphaugh, near Selkirk, he was surprised (September 11) by a detachment of the regular Scottish army, under General David Leslie, who completely defeated his troops, and obliged him to leave the kingdom. His having gained six victories in succession, over larger bodies of men, has procured for him a distinguished name; but his cruelty, and the ambition to which his motives were confined, detract from his character.

CONCLUSION OF THE CIVIL WAR.

The English campaign of 1645 ended in the complete overthrow of the king. Throughout the war, his enemies had been continually improving in discipline, in conduct, and in that enthusiasm which animated them so largely; while the Royalists had become, out of a mere principle of opposition, so extremely licentious, as to be rather a terror to their friends than to their enemies. The new-modelling of the Parliamentary army, which took place early in 1645, had also added much to the effectiveness of the troops, who were now nominally commanded by Sir Thomas Fairfax, but in reality by Oliver Cromwell, who bore the rank of lieutenant-general. The consequence was that, in a pitched battle at Naseby (June 14), the king was so completely beaten, that he and his party could no longer keep the field. He had no resource but to retire into Oxford, a town zealously affected to his cause, and well fortified.

He endeavoured, from this forlorn position, to renew the negotiations for a peace; but every attempt of that kind was frustrated by the Independents, who, though a minority in the House of Commons, possessed great power through the army, and, as already mentioned, were desirous of effecting greater changes in church and state than those for which the war was originally undertaken. Dreading the influence of this body, Charles retired privately from Oxford (May 1646) on the approach of the Parliamentary forces, and put himself under the protection of the Scottish army at Newark.

As the views of the Scotch throughout the war had been steadily confined to the security of the Presbyterian religion, along with the safety of the king's person and the establishment of a limited monarchy, they received him with great respect at their camp, and entered into negotiations for effecting their grand object. If Charles would have acceded to their views, he might have immediately resumed a great part of his former power; and the agitations of many subsequent years, as well as his own life, might have been spared. But this was forbidden, not only by his strong prepossession in favour of the Episcopal forms of worship, but also by his conviction, that the Episcopal form of church government was alone compatible with the existence of monarchy. He therefore disagreed with the Presbyterians on the very point which they considered the most vital and important.

From the time when Charles first threw himself into the Scottish camp, the English Parliament had made repeated and strenuous demands for the surrender of his person into their hands. The Scots, however, though acting partly as a mercenary army, asserted their right, as an independent nation under the authority of the king, to retain and protect him. At length, despairing of inducing him to sanction the Presbyterian forms, and tempted by the sum of £400,000, which was given to them as a compensation for their arrears of pay, they consented to deliver up their monarch, but certainly without any apprehension of his life being in danger, and, indeed, to a party quite different from that by which he afterwards suffered. The Scottish army then retired (January 1647) to their native country, and were there disbanded.

The king was now placed in Holdenby Castle, and negotiations were opened for restoring him to power, under certain restrictions. While these were pending, the Parliament deemed it unnecessary to keep up the army, more especially as its spirit was plainly observed to be of a dangerous character. On attempting, however, to dismiss this powerful force, the English Commons found that their late servants were become their masters. The troops began to hold something like a Parliament in their own camp; a party of them, under Cornet Joyce, seized the king's person, and brought him to Hampton Court. Cromwell, who was at the bottom of their machinations, received from them the chief command; and at his instigation they retorted upon the Parliament with a demand for the dismissal of the leaders of the Presbyterian party, and a general right of new-modelling the government and settling the nation. The House of Commons, supported by the city of London, made a bold opposition to these demands, but was ultimately obliged to yield to a force which it had no means of resisting. From that time military violence exercised an almost uncontrolled mastery over England.

TRIAL AND EXECUTION OF THE KING.

The leaders of the army being anxious to fortify themselves by all possible means against the Presbyterians, opened a negotiation with the king, whose influence, such as it now was, they proposed to purchase, by allowing Episcopacy to be the state religion, and leaving him in command of the militia. Charles, however, with characteristic insincerity, carried on at the same time a negotiation with the Presbyterians, which, being discovered by the military chiefs, caused them to break off all terms with him. Under dread of their resentment, he made his escape from Hampton Court (November 11, 1647); and after an unsuccessful attempt to leave the kingdom, was obliged to put himself under the charge of the governor of Carisbrooke Castle, in the Isle of Wight. Here he entered upon a new negotiation with the House of Commons, to whom he made proposals, and from whom he received certain proposals in return; all of which were, however, rendered of non-avail by a secret treaty which he at the same time carried on with a moderate party of the Scottish Presbyterians.

He finally agreed with the latter party, but under strict secrecy, to give their form of church government a trial of three years, and yield to them in several other points; they, in return, binding themselves to unite their strength with the English Royalists, for the purpose of putting down the Independent party, now predominant in the English Parliament. With some difficulty the Duke of Hamilton and others, who conducted this negotiation, succeeded, by a vote of the Scottish Parliament, in raising an army of 12,000 men, with which they invaded England in the summer of 1648. The more zealous of the clergy and people of Scotland protested against an enterprise, which, from its co-operating with Royalists and Episcopalians, and not perfectly insuring the ascendancy of the Presbyterian church, appeared to them as neither deserving of success nor likely to command it. As the Scottish army penetrated the western counties, parties of Presbyterians and Royalists rose in different parts of England, and for some time the ascendancy of the Independents seemed to be in considerable peril. But before the forces of the enemy could be brought together, Cromwell, with 8000 veteran troops, attacked and overthrew Hamilton at Preston, while Fairfax put down the insurgents in Kent and Essex. Hamilton was himself taken prisoner, and very few of his troops ever returned to their native country.

While Cromwell was employed in suppressing this insurrection, and in restoring a friendly government in Scotland, the Presbyterians of the House of Commons, relieved from military intimidation, entered upon a new negotiation with Charles, which was drawing towards what appeared a successful conclusion—though the king secretly designed to deceive them, and to pursue other means for an effectual restoration—when the army returned to London, breathing vengeance against him for this last war, of which they considered him as the author. Finding the Parliament in the act of voting his concessions to be satisfactory, Cromwell sent two regiments, under Colonel Pride, who forcibly excluded from it about two hundred members of the Presbyterian party; a transaction remembered by the epithet of *Pride's Purge*. The remainder, being chiefly Independents, were ready to give a colour of law to whatever farther measure might be dictated by the military leaders. Convinced of the utter faithlessness of the king, and that, if he continued to live, he would take the earliest opportunity of revenging himself for what had already been done, Cromwell and his asso-

clates resolved to put him to death. A High Court of Justice, as it was called, was appointed by ordinance, consisting of a hundred and thirty-three persons, named indifferently from the Parliament, the army, and such of the citizens as were known to be well affected to the Independent party. This body sat down in Westminster Hall (January 20, 1649), under the presidency of a barrister named Bradshaw, while another named Coke acted as solicitor for the people of England. Charles, who had been removed to St James's Palace, was brought before this court, and accused of having waged and renewed war upon his people, and of having attempted to establish tyranny in place of the limited regal power with which he had been intrusted. He denied the authority of the court, and protested against the whole of the proceedings, but was nevertheless found guilty and condemned to die. On the 30th of January, he was accordingly beheaded in front of his palace of Whitehall. The people were in general horror-struck at this event; but they were too effectually kept in check by the army to have any influence in preventing or resenting it.

Charles I. was a man of slender person, of the middle size, and of a grave and somewhat melancholy cast of countenance. He had not a gracious manner, but possessed considerable dignity. He was sincerely attached to the Church of England, for which he might be considered as a martyr, and he was able to reason very acutely in favour of the divine origin of Episcopacy. The general opinion of modern times respecting his political conduct is unfavourable; though few doubt that his death was a most disgraceful, as well as imprudent act, on the part of those who brought it about. The worst point of his character was his insincerity: he was prone to using equivocations, with a view to deceive his opponents, and therefore no enemy could depend upon him in negotiation. In private life he was a virtuous man, and he is entitled to much credit for the taste which he displayed in the encouragement of the fine arts. He left three sons—Charles, Prince of Wales; James, Duke of York, afterwards James II.; and Henry, Duke of Gloucester, who died in early life. He also left several daughters, one of whom, named Elizabeth, was treated with much harshness by the new government, and died not long after him in prison.

In the reign of Charles I., the chief literary men were Ben Jonson and Philip Massinger, dramatists, and Samuel Daniel, Michael Drayton, and William Drummond, poets. The most eminent philosophical character was Dr William Harvey, who discovered the circulation of the blood. Elegant architecture was now for the first time introduced into private buildings. The king patronised the Dutch artists, Rubens and Vandyke, and collected many fine pictures, which were afterwards sold by his enemies. The Excise and the tax upon landed property were introduced by the Parliament, in order to support the war against the king. When the Parliamentary party became triumphant, it suppressed the theatre, which was not again set up till the restoration of monarchy.

THE COMMONWEALTH—SUBJUGATION OF IRELAND AND SCOTLAND.

Though the execution of the king produced a considerable reaction in favour of royalty, the small remaining part of the House of Commons, which got the ridiculous nickname of the *Rump*, now established a republic, under the title of the Commonwealth, the executive being trusted, under great limitations, to a council of forty-one members, while in reality Cromwell possessed the chief influence. The House of Peers was voted a grievance, and abolished, and the people were declared to be the legitimate source of all power. Soon after the king's death, the Duke of Hamilton, and a few other of his chief adherents, were executed.

During the progress of the civil war, Ireland had been the scene of almost ceaseless contention among the various parties of the king, the English House of Commons, and the Catholics, none of which could effectually suppress the rest. The most remarkable event was a secret agreement which Charles made, in 1646, with the Earl of Glamorgan, to establish the Catholic religion in Ireland, on condition that its partisans should assist him in putting down his enemies in England and Scotland; a transaction which ultimately injured his reputation, without leading to any solid advantage. At the time of his execution, the Royalists were in considerable strength under the Duke of Ormond, while Hugh O'Neill was at the head of a large party of Catholics, who were not indisposed to join the other party, provided they could be assured of the establishment of their religion. While the two parties in union could have easily rescued the country from the English connection, Cromwell landed (August 1649) with 12,000 horse and foot, and in a series of victories over the scattered forces of his various opponents, succeeded without any great difficulty in asserting the sway of the Commonwealth. One of his most important actions was the capture of Drogheda, where he put the garrison and a number of Catholic priests to the sword, in order to strike terror into the nation.

The people of Scotland, who had had scarcely any other object in the civil war than the establishment of their favourite form of worship, and were sincere friends to a limited monarchy, heard of the death of the king with the greatest indignation, and immediately proclaimed his eldest son Charles. Early in 1650, the young monarch, who had taken refuge in Holland, sent Montrose with a small force to attempt a Cavalier insurrection in Scotland; but this nobleman being taken and put to death, Charles found it necessary to accede to the views of the Scotch respecting the Presbyterian religion, and he was accordingly brought over and put at the head of a considerable army, though under great restrictions. Cromwell, who had now nearly completed the conquest of Ireland, lost no time in returning to London, and organising an army for the suppression of this new attempt against the Commonwealth.

On the 19th of July he crossed the Tweed, and advanced through a deserted country to Edinburgh, where the Scottish army lay in a fortified camp. Sickness in his army, and the want of provisions, at length compelled him to retreat; and the Scottish army, following upon his rear, brought him into a straitened position near Dunbar, where he would soon have been under the necessity of surrendering. In the midst of his perplexities (September 3), he beheld the Scots advancing from the neighbouring heights to give him battle, and, in a transport of joy, exclaimed, 'The Lord hath delivered them into our hands!' The movement was solely the result of interference on the part of the clergy who followed the Scottish camp: the better sense of General Leslie would have waited for the voluntary surrender of his enemy. In the fight which ensued, the veteran troops of Cromwell soon proved victorious. The Scots fled in consternation and confusion, and were cut down in thousands by their pursuers. This gained for Cromwell the possession of the capital and of all the south-east provinces; but the Covenanters still made a strong appearance at Stirling.

Cromwell spent a whole year in the country, vainly endeavouring to bring on another action. During the interval (January 1, 1651), the Scots crowned the young king at Scone, part of the ceremony consisting in his acceptance of the Solemn League and Covenant. In the ensuing summer, Cromwell at length contrived to outflank the position of the Scottish army; but the result was, that Charles led his troops into England without opposition, and made a very threatening advance upon the capital. Ere the Royalists had time to rally around him, Cromwell overtook the king at Worcester, where, after a stoutly-contested fight (September 3, 1651), he proved completely victorious. Charles, with great difficulty, escaped abroad, and Scotland, no longer possessed of a military force to defend itself, submitted to the conqueror. All the courts of the Scottish church were suppressed, and the ministers were left no privilege but that of preaching to their flocks. The country

was kept in check by a small army under General Monk, and in a short time was declared by proclamation to be united with England. Thus was the Independent party, or rather Cromwell, left without a single armed enemy. All the efforts of the people during twelve years to obtain limitations upon the monarchy, had ended in a military despotism!

THE PROTECTORATE.

After the country and its dependencies had been thoroughly settled under the new government, the republican leaders resolved upon commencing hostilities against Holland, which, during the civil war, had manifested a decided leaning towards the king, and had recently treated the triumphant party with marked disrespect. In the summer of 1652, the Dutch fleet, under its famous commanders Van Tromp, De Ruyter, and De Witt, had several encounters with the English ships, under Admirals Blake and Ayscue, without any decided success on either side. But in the ensuing spring, an action was fought between Blake and Van Tromp, in which the latter lost eleven ships. The Dutch then sued for peace, which the Rump Parliament, for various reasons, were little inclined to grant. Their principal motive for prosecuting the war, was a conviction that it tended to restrict the power of Cromwell, to whom they now paid by no means a willing obedience. Cromwell, perceiving their design, proceeded with 300 soldiers to the House (April 1653), and entering with marks of the most violent indignation, loaded the members with reproaches for their robbery and oppression of the public; then stamping with his foot, he gave signal for the soldiers to enter, and addressing himself to the members, 'For shame!' said he; 'get you gone! give place to honester men! I tell you you are no longer a Parliament: the Lord has done with you!' He then commanded 'that bauble,' meaning the mace, to be taken away, turned out the members, and locking the door, returned to Whitehall with the key in his pocket.

Being still willing to keep up the appearance of a representative government, Cromwell summoned one hundred and forty-four persons in England, Ireland, and Scotland, to assemble as a Parliament. These individuals, chiefly remarkable for fanaticism and ignorance, were denominated the *Barebones Parliament*, from the name of one of the members, a leather-seller, whose assumed name, by a ridiculous usage of the age, was Praise-God Barebones. As the assembly obtained no public respect, Cromwell took an early opportunity of dismissing it. His officers then constituted him PROTECTOR of the Commonwealth of Great Britain and Ireland, with most of the prerogatives of the late king.

The war against Holland was still carried on with great spirit. In the summer of 1653, two naval actions, in which both parties fought with the utmost bravery, terminated in the triumph of the English, and the complete humiliation of the Dutch, who obtained peace on the condition of paying homage to the English flag, expelling the young king from their dominions, and paying a compensation for certain losses to the East India Company. In a war which he subsequently made against Spain, the fleets of the Protector performed some exploits of not less importance. The respect which he thus gained for the English name throughout Europe, is one of the brightest points in his singular history. But while generally successful abroad, he experienced unceasing difficulties in the management of affairs at home. Of the various Parliaments which he summoned, no one was found so carefully composed of his own creatures as to yield readily to his will: he was obliged to dissolve them all in succession, after a short trial. He also experienced great difficulty in raising money, and sometimes applied for loans in the city without success. His own officers could scarcely be kept in subordination, but were constantly plotting a reduction of his authority. The Royalists, on the other hand, never ceased to conspire for his destruction; one, named Colonel Titus, went so far as to recommend his assassination in a pamphlet entitled 'Killing no Murder,' after reading which he was never seen again to smile.

The last Parliament called by Cromwell was in January 1656; when, besides the Commons, he summoned the few remaining peers, and endeavoured, by ennobling some of his officers, to make up a kind of Upper House. This assembly proved as intractable as its predecessors, and he contracted such a disgust at the very nature of a representative legislature, as to resolve, like Charles I., never to call another. His health finally sank under the effects of his ill-gotten power, and he died on the 3d September 1658, a day which was thought to be propitious to him, as it was the anniversary of several of his victories. His eldest son, Richard, a weak young man, succeeded him as Protector, and was at first treated with all imaginable respect; but he could not long maintain a rule which even his father had ultimately failed in asserting. He quietly slunk out of public view, leaving the supreme authority in the hands of the Rump, which had taken the opportunity to reassemble.

THE RESTORATION—DUTCH WAR.

This remnant of an old Parliament continued in power till the autumn of 1659, when it gave way to a council of the officers who had been in command under Cromwell. The latter government, in its turn, yielded to the Rump, which sat down once more in December. The people, finding themselves made the sport of a few ambitious adventurers, began to long for some more fixed and respectable kind of government. At this crisis, General Monk, commander of the forces in Scotland, conceived the design of settling the nation. He left Scotland (January 2, 1660), with a considerable army, and though he kept his thoughts scrupulously to himself, all men bent their eyes upon him, as a person destined to realise their hopes. He reached London (February 3), and was received with feigned respect by the Rump. Some resistance was attempted by Lambert, one of Cromwell's officers, but in vain. Ere long, Monk was able to procure the restoration of the members who had been excluded from Parliament by Cromwell, who, being a majority, gave an immediate ascendancy to anti-republican views. As soon as this was effected, an act was passed for calling a new and freely elected Parliament; after which, the existing assembly immediately dissolved itself.

The new Parliament proved to be chiefly composed of Cavaliers and Presbyterians, men agreeing in their attachment to monarchy, though differing in many other views. After some cautious procedure, in which the fears inspired by the late military tyranny were conspicuous, they agreed to invite the king from his retirement in Holland, and to restore him to the throne lost by his father. They were so glad to escape from the existing disorders, that they never thought of making any preliminary arrangement with the king as to the extent of his prerogative. On the 29th of May, being his thirtieth birthday, Charles II. entered London amidst such frantic demonstrations of joy, that he could not help thinking it his own fault, as he said, that he had been so long separated from his people.

One of the first measures of the new monarch was the passing of a bill of indemnity, by which all persons concerned in the late popular movements were pardoned, excepting a few who had been prominently concerned in bringing the king to the block. Harrison, Scrope, and a few other regicides, were tried and executed; and the bodies of Cromwell, Ireton, and Bradshaw, were raised from the grave and exhibited upon gibbets. In Scotland, only three persons suffered—the Marquis of Argyle, Johnston of Warriston, and Mr Guthry, a clergyman: it was considered remarkable, that the marquis had placed the crown upon the king's head at Scone in the year 1651. Excepting in these acts, the king showed no desire of revenging the death of his father, or his own exclusion from the throne. The Parliament which called him home was constituted a legal one by his own ratification of an act for that purpose. In the settlement of other matters, it seemed

the prevailing wish that all the institutions of the country should be made as nearly what they were before the civil war as possible. Thus the Episcopal church was established both in England and Scotland, though not without causing about a third of the clergy in both countries to resign their charges. The stern and enthusiastic piety which prevailed during the civil war, was now treated with ridicule, and the most of the people vied with each other in that licentious riot and drunkenness which is condemned by all systems of faith. The nation, in fact, seemed intoxicated with the safety which they supposed themselves to have at length gained in a restoration to the imperfect freedom they enjoyed before the civil war.

Ireland, which, during the Protectorate, had been managed by Henry, a younger son of Cromwell, acceded to the Restoration with as much readiness as any other part of the British dominions. An act was passed for settling property, by which the Catholics obtained some slight benefits, but which, in its main effects, tended to confirm the rights of the settlers introduced by Cromwell.

Though Charles had been restored with the approbation of a very large portion of his subjects, his most zealous friends were the Royalists and Episcopalians; hence he almost immediately subsided into the character of a party ruler. It was deemed necessary that he should maintain an armed force for the protection of his person, and to keep down popular disturbances. He therefore caused several horse regiments to be embodied under the name of Life Guards, being chiefly composed of Royalist gentlemen upon whom a perfect dependence could be placed; and he afterwards added two or three foot regiments, the whole amounting to about 5000 men. The king paid these troops chiefly out of the money allowed for his own support, for Parliament did not sanction his keeping up such a force, and the nation generally beheld it with suspicion. This was the commencement of a *standing army* in England.

Personally indolent, dissolute, and deficient in conscientiousness, and surrounded almost exclusively by the ministers of the basest pleasures, Charles was not qualified to retain the sincere respect of a people whose habitual character is grave and virtuous. His extravagant expenditure soon cooled the affections of his Parliament, and he began to find considerable difficulties in obtaining money. To relieve himself from this embarrassment, he accepted £40,000 from the French king for Dunkirk, a French port, which had been acquired by Cromwell. For the same purpose, he married a Portuguese princess of the Catholic religion, who possessed a dowry of half a million. He also commenced (1664) a war against Holland, for apparently no better reason than that, in applying the Parliamentary subsidies necessary for keeping up hostilities, he might have an opportunity of converting part of the money to his own personal use.

This Dutch war was chiefly conducted by sea. On the 3d of June 1665, an English fleet of 114 sail met a Dutch one which numbered just one ship less, near Lowestoffe, and after an obstinate fight, gained a complete victory, depriving the enemy of eighteen vessels, and compelling the rest to take refuge on their own coast. The commander on this occasion was the Duke of York, the king's younger brother; a man of greater application and more steady principles, but who soon after became unpopular, in consequence of his avowing himself a Catholic.

Some other well-contested actions took place at sea, and the English, upon the whole, confirmed their naval supremacy. Owing, however, to a failure of the supplies, the king was obliged to lay up his best vessels in ordinary, and to send only an inferior force to sea. The Dutch took advantage of this occurrence to send a fleet up the Thames (June 10, 1667), which, meeting with no adequate resistance, threatened to lay the capital in ruins and destroy its shipping. Fortunately, the Dutch admiral did not think it expedient to make this attempt, but retired with the ebb of the tide, after having sunk and burnt nearly twenty vessels, and done much other damage. The king, finding himself rather impoverished than enriched by the war, soon after concluded a peace.

PLAGUE AND FIRE OF LONDON—PERSECUTION IN SCOTLAND.

In the meantime two extraordinary calamities had befallen the metropolis. In the summer of 1665, London was visited by a plague, which swept off about 100,000 people, and did not experience any abatement till the approach of cold weather. On this occasion the city presented a wide and heartrending scene of misery and desolation. Rows of houses stood tenantless, and open to the winds; the chief thoroughfares were overgrown with grass. The few individuals who ventured abroad, walked in the middle of the streets, and when they met, declined on opposite sides to avoid the contact of each other. At one moment were heard the ravings of delirium, or the wail of sorrow, from the infected dwelling; at another the merry song or careless laugh from the tavern, where men were seeking to drown in debauchery all sense of their awful situation. Since 1665, the plague has not again occurred in London, or in any other part of the kingdom.

The second calamity was a conflagration, which commenced on the night of Sunday the 2d of September 1666, in the eastern and more crowded part of the city. The direction and violence of the wind, the combustible nature of the houses, and the defective arrangements of that age for extinguishing fires, combined to favour the progress of the flames, which raged during the whole of the week, and burnt all that part of the city which lies between the Tower and the Temple. By this calamity, 13,200 houses and 89 churches, covering in all 430 acres of ground, were destroyed. The flame at one time formed a column a mile in diameter, and seemed to mingle with the clouds. It rendered the night as clear as day for ten miles around the city, and is said to have produced an effect upon the sky which was observed on the borders of Scotland. It had one good effect, in causing the streets to be formed much wider than before, by which the city was rendered more healthy. By the populace, this fire was believed to have been the work of the Catholics, and a tall pillar, with an inscription to that effect, was reared in the city, as a monument of the calamity. This pillar with its inscription still exists; but the fire is now believed to have been occasioned purely by accident.

Meanwhile, in Scotland great dissatisfaction had been occasioned by the imposition of Episcopacy upon the church, and advantage had been taken of various acts of resistance on the part of the clergy and people, to visit both with measures of considerable severity. Heavy fines were imposed upon such as failed to attend the ministrations of the established clergy, on the suspicion that, when not at church, they were hearing the ejected clergymen in some private place. A small standing army was kept up to enforce the fines, and, till these were paid, free quarters were exacted for the soldiers. Tired of suffering, a few of the peasantry of Galloway rose in rebellion (November 1666), and advancing through the disaffected districts of Ayrshire and Lanarkshire, gradually assumed a threatening appearance. An unfortunate movement towards Edinburgh, where they expected accessions, thinned their numbers, and they were overpowered by General Dalyell at the Pentland Hills. Thirty-four of the prisoners were executed as rebels, chiefly at the instigation of Sharpe, Archbishop of St Andrews, who, with the other prelates, was peculiarly zealous in behalf of the government. Besides these sufferers, fifty persons, including fifteen clergymen, forfeited lands and goods.

Some attempts were now made, at the desire of the king, to induce the ejected clergy to connect themselves with the church; but very few took advantage of a leniency which they believed would have been extended also to Catholics, and which involved their acknowledgment of the king's supremacy in spiritual affairs. About the year 1670, some divines began to hold conventicles in secluded parts of the country, to

which the country people used to come with arms. At these places a far warmer kind of devotion was felt than could be experienced under tamer circumstances; and, as may be supposed, such meetings were not calculated to diffuse or foster a sentiment of loyalty. Sensible of this, the government obtained an act, imposing very severe fines on all who should preach or listen at conventicles; but without producing any effect. The penalties with which they were threatened seemed only to make the people more attached to their peculiar modes of worship and church government.

THE TRIPLE ALLIANCE—THE FRENCH ALLIANCE.

The kingdom of France was at this period, under Louis XIV., rising into a degree of power and wealth which it had never before known. Louis had some claims through his wife upon the Netherlands (since called Belgium), which were then part of the Spanish dominions. He accordingly endeavoured to possess himself of that country by force of arms. A jealousy of his increasing power, and of the Catholic religion, professed by his people, induced the English to wish that his aggressions should be restrained. To gratify them, Charles entered into an alliance with Holland and Sweden, for the purpose of checking the progress of the French king. In this object he was completely successful, and consequently he became very popular. The Parliament, however, having disappointed him of supplies, he soon after entirely changed his policy, and with the assistance of five abandoned ministers—Clifford, Ashley, Buckingham, Arlington, and Lauderdale, who were called the CABAL, from the initials of their names forming that word, resolved to render himself, if possible, independent of Parliament; in other words, an absolute prince. In consideration of a large bribe from Louis, he agreed to join France in a war against Holland, with a view of putting an end to that example of a Protestant republic.

War was accordingly declared in May 1672, and the naval force of England was employed in meeting that of the Dutch by sea; while Louis led a powerful army across the Rhine, and in a very short time had nearly reduced the whole of the Seven Provinces. In this emergency the Dutch could only save themselves from absolute ruin by laying a great part of their country under water. The English, who had not entered heartily into this war, soon began to be alarmed for the fate of Holland, which was almost their only support against the dread of Popery; and though forbidden under severe penalties to censure the government measures, they soon contrived to exhibit so much dissatisfaction, as to render a change of policy unavoidable.

The king found it necessary to assemble his Parliament (February 1673), and it was no sooner met than it passed some acts highly unfavourable to his designs. Among these was the famous Test Act, so called because it enacted the imposition of a religious oath upon all persons about to enter the public service, the design being to exclude the Catholics from office. Above all things, the House of Commons declared that it would grant no more supplies for the Dutch war. The king resolved to prorogue the assembly; but before he could do so, they voted the alliance with France, and several of his ministers, to be *grievances*. Charles, who, in wishing to be absolute, had been inspired by no other motive than a desire of ease, now saw that there was a better chance of his favourite indulgence in giving way to his subjects than in any other course; and he at once abandoned all his former measures, and concluded a separate peace with Holland. This country was now beginning, under the conduct of the Prince of Orange, to make a good defence against the French, which it was the better enabled to do by obtaining the friendship of Germany and Spain. In the year 1678, after a war which, without any decisive victories, will ever reflect lustre upon Holland, a peace was concluded. The Prince of Orange, in the previous year, had married the Princess Mary, eldest daughter of the Duke of York, and educated in the reformed faith—an alliance which pleased the English, from its strengthening the Protestant interest, and which was destined, some years after, to bring about important results.

During the whole of this reign the corruptness of the court was very great; but it was in some measure the protection of the public. Charles spent vast sums in debauchery, and thus made himself more dependent on his Commons than he would otherwise have been. Many of the Commons were exceedingly corrupt, and all kinds of evil methods were adopted to render them more so. Bribes were distributed among them, and they were frequently *closeted*; that is, brought into the presence of the king individually, and personally solicited for votes. Still a considerable party maintained its purity and independence, and long kept a majority against the court.

THE POPISH PLOT.

For a century past, one of the grand moving-springs of the public conduct had been a strong detestation and dread of the adherents of the Romish church. This sentiment did not arise from any fear of the numbers or political strength of the Catholics, for they were but a small minority of the nation, but from a belief generally entertained that the Catholics scrupled at no treachery or cruelty which might seem favourable to the re-establishment of their religion. The popular notions, newly inflamed by the avowed Catholicism of the Duke of York, heir-presumptive to the crown, and by the late intrigues of the king with France, were encouraged by a party who wished to impose restrictions upon the royal prerogative, and to exclude the duke from the succession. In 1678, an account of a plot, supposed to have been formed by the Papists, for burning London, massacring the Protestants, and destroying the king and the Protestant religion, was circulated by one Kirby, a chemist; Tong, a weak, credulous person; and Titus Oates, one of the most abandoned miscreants that ever appeared in history. The circumstances attending this pretended discovery were so unlike reality, that if the nation had not been in a state of hallucination at the time, they never could have been for a moment listened to.

Nevertheless, the Popish Plot, as it was called, was not only generally believed by the people, but also by the Parliament and the court; and such was the extent of the excitement, that a general massacre of the Catholics was apprehended. Even the king, though incredulous, was obliged to give way to the prevailing delusion. Meanwhile letters were seized, which discovered that the Duke of York carried on a correspondence with France, in opposition to the religion and interests of his country. A correspondence of the king's minister Danby, which involved the king in the disgrace of similar machinations, was detected; and to crown the whole, Sir Edmondsbury Godfrey, the magistrate who first gave publicity to the plot, was found in the fields dead, with his own sword stuck through his body. For two years this horrible delusion reigned over the public mind, and under its influence many innocent Catholics were condemned to death. At length the execution of a venerable nobleman, the Viscount Stafford, excited a general sensation of pity, and the people gradually saw and repented of the excesses which they had committed.

THE HABEAS CORPUS ACT—THE EXCLUSION BILL.

At this period the House of Commons appears for the first time formally separated into the two parties who have ever since been recognised in it. The appellation *Tory*, applied to the friends of the Court, was originally brought from Ireland, where the word *Toree* (give me), used by a Cavalier banditti, had gradually been extended to the whole of the Cavalier or Royalist party. The term *Whig*, which fell to the lot of the Opposition, is said to have originated in Scotland, being first applied to the sterner portion of the Presbyterian party in the western counties.

The Parliament having impeached Danby, the king

dissolved it, and called another. The new assembly, which met in October 1679, proved equally uncontrollable as the last. It passed, by a majority of seventy-nine, a bill excluding the Duke of York from the succession; declared the king's Guards and standing army illegal; and passed the *Habeas Corpus* act, which, limiting the time between the apprehension of a supposed criminal and his trial, rendered it impossible for this or any future sovereign to keep individuals in prison at his pleasure, as had formerly been done. The last measure is still justly looked upon as the great bulwark of personal liberty in Britain. Though the bill for excluding the Duke of York was thrown out by the Upper House, that prince found it necessary to evade the popular odium, first by retiring to Brussels, and afterwards to Scotland. At the same time, the Duke of Monmouth, eldest natural son of the king, and believed by many to be legitimate, began to be regarded by the Presbyterians and liberal party in general as a preferable heir to the crown. In these agitations, the populace of London was particularly active; and it was at this period that the term *mob* was first used. The word was an abbreviation of *mobile vulgus*, a phrase signifying 'the unsteady vulgar,' which the court contemptuously applied to the crowds which daily assembled.

PERSECUTION IN SCOTLAND.

The persecution in Scotland for field-meetings was so severe, that, before the year 1678, it was supposed that 17,000 persons had suffered by it in fine, imprisonment, and death. A bond was attempted to be imposed upon the people, in which conventicles were renounced; and to enforce it in the west country, an army of 10,000 Highlanders was permitted to range there at free quarters. Nothing, it was found, could break the resolution of the people to adhere to their favourite modes of worship; on the contrary, all these severe measures inspired a deep resentment against the government, as well as the prelates. On the 2d of May 1679, as Archbishop Sharpe was going in his coach to St Andrews, he was beset by a body of desperate men, among whom were Balfour of Burleigh, and Hackstoun of Rathillet, who cruelly slew him. An insurrection of the west country conventiclers immediately followed, and a party of dragoons sent against them, under Captain Graham of Claverhouse, was gallantly repulsed at Loudon Hill. In a brief space, about 5000 men were found in arms against the state, among whom were many of the lesser gentry, the command being assumed by a gentleman named Hamilton. The rebellion was considered so formidable, that the Duke of Monmouth was sent down to head the troops for its suppression. He found them posted advantageously at Bothwell Bridge (June 22); but divisions on certain religious and political points unfitted them for making a good resistance. After defending the bridge for a while, they turned in a panic, and fled. Three hundred were killed in the pursuit, and 1200 taken prisoners.

This unfortunate insurrection, being followed up by fresh severities, effectually subdued all disposition to resistance, except in a small party of the Nonconformists, whose principles were of an unusually enthusiastic kind. Twenty armed men, professing these principles, were assailed by a detachment of dragoons in Airsmoss (1680), when their leader Cameron, a clergyman, and several others, were killed, after a desperate resistance. Cargill, another preacher of this extreme sect, soon after held a conventicle at Torwood, near Stirling, where he formally excommunicated the king, his brother, and ministers. These proceedings had a highly injurious effect, in as far as they gave occasion for fresh severities against the whole party; but they originated in such pure and pious motives, and brought down such calamities upon the unshrinking heads of those concerned in them, that they have ever since been regarded in Scotland with great respect.

The more uncompromising party soon after arranged themselves into what they called a Secret Society, and (12th January 1682) openly appeared at Lanark, where they published a declaration of their principles, among which a renunciation of all allegiance to Charles II. was the most remarkable. The dispute between the government and its subjects had now arrived at such an extremity, that individuals were shot in the fields by military law, if they merely refused to acknowledge the royal authority. The most of the people, unable or unwilling to resist, were therefore obliged to give an external reverence to the church established amongst them, or at least to the irregular clergy, who, by submissions odious to the community, had received what was called an *indulgence*, or permission to preach. A great disposition prevailed to emigrate to the American colonies, as the only means of escaping the oppressive restraints which prevailed at home.

THE KING BECOMES ABSOLUTE.

In the meantime, an extraordinary revolution took place in England. About the time that popular feeling was recovering from the mania respecting the Popish Plot, the House of Commons had shown stronger symptoms than ever of a determination to seek the exclusion of the Duke of York from the throne. The time was unfortunate, for men were beginning to suspect that they had been deceived in many of their surmises about danger from the Catholics. The object, moreover, touched upon a principle which many men in that age deemed sacred—that of hereditary succession; nor was it possible to blame the king for opposing a measure so unfavourable to the interests of his nearest blood relation. In fact, the Whig party pushed their favourite measure to such a point, as to cause a reaction of the public mind against their views.

The king called a new Parliament to meet at Oxford, resolved, in the event of its not proving more tractable, to take advantage of the popular feeling, dissolve the assembly, and never call another. It met on the 21st of March 1681, and the Whigs soon showed that the Exclusion Bill was still uppermost in their minds. The king permitted one of his ministers to propose, that at his death the Princess of Orange should reign as regent, and the new king be for ever banished five hundred miles from his dominions. To this concession, which now seems much greater than could have reasonably been expected, they would not listen for a moment. Charles then dissolved the Parliament as utterly intractable, and, as he expected, he was generally applauded for the act. Popular feeling had now taken a turn in favour of royalty; and the representative branch of the legislature, long regarded with veneration by the English, was once more permitted to go down without a struggle. The king henceforth ruled entirely without control, being secretly supplied with money by France, in consideration of his non-interference with the conquests of that country.

THE RYE-HOUSE PLOT—DEATH OF CHARLES II.

A fit of slavishness now befell the English nation, as remarkable in its extent as the late fury against the court and the Catholics. Supported by this mood of the people, Charles caused all the corporations in the kingdom to give up their old charters, and accept of new ones, by which he became all-powerful over the elections of magistrates, and, consequently, over those of parliamentary representatives, should ever another election of that kind take place. The leaders of the late majority in Parliament, comprising the Duke of Monmouth, Lord Russell (son of the Earl of Bedford), the Earl of Essex, Lord Howard, the famous Algernon Sydney, and John Hampden, grandson of the patriot who first resisted Charles I., being reduced to absolute despair, formed a project for raising an insurrection in London, to be supported by one in the west of England, and another under the Earl of Argyle in Scotland, and the object of which should be confined to a melioration of the government. They were betrayed by an associate named Rumsay, and implicated, by a train of unfortunate circumstances, in a plot for assassinating

the king (styled the Rye-House Plot), of which they were perfectly innocent. By the execution of Russell and Sydney, and some other severities, the triumph of the king might be considered as completed. After having been an absolute sovereign for nearly four years, he died (February 6, 1685), professing himself at the last to be a Catholic, and was succeeded by the DUKE OF YORK.

Charles II. was a prince of a gay and cheerful disposition, and so noted a sayer of witty things, and so addicted to humorous amusements, that he was called 'the Merry Monarch.' His wit, shrewdness, and good-humour, form the best side of his character. On the other side, we find a deficiency of almost every active virtue and of all steady principle. He never allowed any duty of his station, or any claim upon his justice or clemency, to interfere with his own interests, or even to disturb him in his indolent and vicious pleasures. Neglecting his wife, who never had any children, he spent most of his time with his various mistresses, who openly lived at court, and were even received by the queen. Of these ladies, the most remarkable were Louisa Querouaile, whom he created Duchess of Portsmouth, and Barbara Villiers, whom he made Duchess of Cleveland. Six sons of the king by his mistresses were made dukes, and five of these were the progenitors of families in the English nobility.

During the reign of Charles II., the nation advanced considerably in the arts of navigation and commerce; and the manufactures of brass, glass, silk, hats, and paper, were established. The post-office, set up during the Commonwealth as a means of raising money, was advanced in this reign, and the penny-post was now begun in London by a private person. Roads were greatly improved, and stage-coach travelling was commenced, though not carried to any great extent. During this reign, tea, coffee, and chocolate, which have had a great effect in improving and softening manners, were first introduced. In 1660, the Royal Society was established in London, for the cultivation of natural science, mathematics, and all useful knowledge. The science of astronomy was greatly advanced by the investigations of Flamstead and Halley. But the greatest contribution to science was made by Sir Isaac Newton, whose Principles of Natural Philosophy were published in 1685: in this work, the true theory of planetary motions was first explained, in reference to the principle of gravitation. Amongst the literary men of the period, the first place is to be assigned to John Milton, author of the 'Paradise Lost' and other poems: Samuel Butler shines as a humorous and satirical poet, and Edmund Waller as a lyrist. Amongst divines, the highest names connected with the church are those of Jeremy Taylor and Isaac Barrow; while the highest among the Nonconformists are those of Richard Baxter and John Bunyan. The theatre, which had been suppressed during the Commonwealth, was revived in this reign; but the drama exhibited less talent and more licentiousness than it did in the previous reigns. Female characters, which had formerly been acted by men, were now for the first time performed by females.

JAMES II.—EXPEDITION OF MONMOUTH.

Charles II., with all his faults, had conducted himself towards his subjects with so much personal cordiality, and had so well calculated his ground before making any aggressions upon popular liberty, that he might probably have pursued his arbitrary career for many years longer. But his brother James, though much more respectable as a man, more industrious, and more sincere, wanted entirely the easiness of carriage, pleasantry, and penetration, which were the grounds of the late king's popularity and success. He was, moreover, an avowed Catholic, and inspired by an ardent desire of reforming the nation back into that faith. He began his reign by declaring before the privy-council his intention to govern solely by the laws, and to maintain the existing church; and such was the confidence in his sincerity, that he soon became very popular. Addresses poured in upon him from all quarters, professing the most abject devotion to his person. The Parliament called by him voted an ample revenue, and expressed the greatest servility towards him in all things. The doctrines of passive obedience, and the divine right of the sovereign, were now openly preached. The university of Oxford promulgated an elaborate declaration of passive obedience to rulers, which they declared to be 'clear, absolute, and without any exception of any state or order of men.'

The remains of the Whig party still existed, though in exile, and there were some districts of the country where they were supposed to have considerable influence. The Duke of Monmouth and the Earl of Argyle (the latter of whom had been condemned to death in Scotland, for adding a qualification to the test-oath, but had escaped) met in Holland, and projected two separate invasions, for the purpose of expelling King James. The former soon after landed in the west of England with a small retinue, and quickly found himself at the head of 5000 persons, though irregularly armed. At several places he caused himself to be proclaimed king, which offended many of his principal adherents, as inconsistent with his previous engagements. Upon the whole, his conduct was not energetic enough for the management of such an enterprise. Being attacked by the king's troops near Bridgewater, his infantry fought with some spirit, but being deserted by the cavalry, and by the duke himself, were obliged to give way. Monmouth was taken and executed. Many of his followers were hanged without form of trial by the royal troops, and others were afterwards put to death, with hardly any more formality, by the celebrated Chief-Justice Jefferies, whom the king sent down with a commission to try the offenders. The butchery of several hundred men of low condition, who were unable of themselves to do any harm to the government, was looked upon as a most unjustifiable piece of cruelty, even if it had been legally done; and the principal blame was popularly ascribed to the king.

The Earl of Argyle sailed in May with a corresponding expedition, and landed in that part of the West Highlands which owned his authority. Unfortunately for him, the government had received warning, and seized all the gentlemen of his clan upon whom he had chiefly depended. He nevertheless raised between 2000 and 3000 men, and made a timid advance to Glasgow, in the expectation of being joined by the persecuted Presbyterians of that part of the country. Being surrounded on the march by various parties of troops, he dispersed his army, and sought to escape in disguise, but was taken, brought to Edinburgh, and executed. Thus terminated the last effort made by the Whig party to ameliorate the despotic sway of the Stuarts.

ARBITRARY MEASURES OF THE KING.

Encouraged by his successes, James conceived that he might safely begin the process of changing the established religion of the country. On the plea of his supremacy over the church, he took the liberty of dispensing with the test-oath in favour of some Catholic officers, and thus broke an act which was looked upon, under existing circumstances, as the chief safeguard of the Protestant faith. His Parliament, servile as it was in temporal matters, took the alarm at this spiritual danger, and gave the king so effectual a resistance that he resorted to a dissolution. Transactions precisely similar took place in Scotland.

Heedless of these symptoms, he proclaimed a universal toleration, for the purpose of relieving the Catholics, and thus assumed the unconstitutional right of dispensing with acts of Parliament. The nation was thrown by this measure, and by the numerous promotions of Roman Catholics, into a state of great alarm; even the clergy, who had been so eager to preach an implicit obedience to the royal will, began to see that it might be productive of much danger. When James commanded that his proclamation of toleration should be read in every pulpit in the country, only two hundred of the clergy obeyed. Six of the bishops joined

in a respectful petition against the order; but the king declared that document to be a seditious libel, and threw the petitioners into the Tower. In June 1688, they were tried in Westminster Hall, and to the infinite joy of the nation, acquitted.

Blinded by religious zeal, the king proceeded on his fatal course. In defiance of the law, he held open intercourse with the Pope, for the restoration of Britain to the bosom of the Romish church. He called Catholic lords to the privy-council, and even placed some in the cabinet. Chapels, by his instigation, were everywhere built, and monks and priests went openly about his palace. A court of high commission—a cruel instrument of power under Charles I.—was erected, and before this every clerical person who gave any offence to the king was summoned. He also excited great indignation, by violently thrusting a Catholic upon Magdalen College, at Oxford, as its head, and expelling the members for their resistance to his will. Public feeling was wound to the highest pitch of excitement by the queen being delivered (June 10, 1688) of a son, who might be expected to perpetuate the Catholic religion in the country, and whom many even went the length of suspecting to be a supposititious child, brought forward solely for that purpose.

The disaffection produced by these circumstances extended to every class of the king's subjects, except the small body of Roman Catholics, many of whom could not help regarding the royal measures as imprudent. The Tories were enraged at the ruin threatened to the church of England, which they regarded as the grand support of conservative principles in the empire. The Whigs, who had already made many strenuous efforts to exclude or expel the king, were now more inflamed against him than ever. The clergy, a popular and influential body, were indignant at the injuries inflicted upon their church; and even the dissenters, though comprehended in the general toleration, saw too clearly through its motive, and were too well convinced of the illegality of its manner, and of the danger of its object, as affecting the Protestant faith, to be exempted from the general sentiment. But for the birth of the Prince of Wales, the people at large might have been contented to wait for the relief which was to be expected, after the death of the king, from the succession of the Princess of Orange, who was a Protestant, and united to the chief military defender of that interest in Europe. But this hope was now shut out, and it was necessary to resolve upon some decisive measures for the safety of the national religion.

THE REVOLUTION.

In this crisis, some of the principal nobility and gentry, with a few clergymen, united in a secret address to the Prince of Orange, calling upon him to come over with an armed force, and aid them in protecting their faith and liberties. This prince, who feared that England would soon be joined to France against the few remaining Protestant powers, and also that his prospects of the succession in that country, as nephew and son-in-law of the king,* were endangered, listened readily to this call, and immediately collected a large fleet and army, comprising many individuals, natives of both Scotland and England, who had fled from the severe government of the Stuart princes. The preparations for the expedition were conducted with great secrecy, and James was partly blinded to them, by a rumour that their only object was to frighten him into a closer connection with France, in order to make him odious to his subjects. When he was at length assured by his minister in Holland that he might immediately expect a formidable invasion, he grew pale, and dropped the letter from his hands. He immediately ordered a fleet and large army to be collected, and, that he might regain the affections of his subjects, he called a parliament, and undid many of his late measures. The people justly suspected his concessions to be insincere, and were confirmed in their belief, when, on a rumour of the Prince of Orange being put back by a storm, he recalled the writs for assembling Parliament.

On the 19th of October, the Prince of Orange set sail with 50 ships of war, 25 frigates, 25 fire-ships, and 500 transports, containing 15,000 land troops. A storm occasioned some damage and delay; but he soon put to sea again, and proceeded with a fair wind along the British Channel, exhibiting from his own vessel a flag, on which were inscribed the words, 'THE PROTESTANT RELIGION AND THE LIBERTIES OF ENGLAND,' with the apposite motto of his family, '*Je Maintiendrai*'—'I will maintain.' As he passed between Dover and Calais, his armament was visible to crowds of spectators on both shores, whose feelings were much excited at once by its appearance and its well-known purpose. The English fleet being detained at Harwich by the same wind which was so favourable to the prince, he landed (November 5) without opposition at Torbay, and immediately proceeded to circulate a manifesto, declaring the grievances of the kingdom, and promising, with the support of the people, to redress them.

At the first there seemed some reason to fear that the prince would not meet with adequate support. On his march to Exeter, and for eight days after arriving there, he was not joined by any person of consequence. The nation, however, soon became alive to the necessity of giving him encouragement. The gentry of Devon and Somersetshires formed an association in his behalf. The Earls of Bedford and Abingdon, with other persons of distinction, repaired to his quarters at Exeter. Lord Delamere took arms in Cheshire; the city of York was seized by the Earl of Danby; the Earl of Bath, governor of Plymouth, declared for the prince; and the Earl of Devonshire made a like declaration in Derby. Every day discovered some new instance of that general confederacy into which the nation had entered against the measures of the king. But the most dangerous symptom, and that which rendered his affairs desperate, was the spirit which he found to prevail in his army. On his advancing at its head to Salisbury, he learned that some of the principal officers had gone over to the Prince of Orange. Lord Churchill (afterwards famous as Duke of Marlborough), Lord Trelawney, and the king's son-in-law, George, Prince of Denmark, successively followed this example. Even his daughter, the Princess Anne, deserted him. In great perplexity, he summoned a council of peers, by whose advice writs were issued for a new Parliament, and commissioners despatched to treat with the prince. A kind of infatuation now took possession of the king; and having sent the queen and infant prince privately to France, he quitted the capital at midnight, almost unattended, for the purpose of following them, leaving orders to recall the writs and disband the army. By this procedure, the peace of the country was imminently endangered; but it only served to hasten the complete triumph of the Prince of Orange, who had now advanced to Windsor. The supreme authority seemed on the point of falling into his hands, when, to his great disappointment, the king, having been discovered at Feversham, in Kent, was brought back to London, not without some marks of popular sympathy and affection. There was no alternative but to request the unfortunate monarch to retire to a country-house, where he might await the settlement of affairs. James, finding his palaces taken possession of by Dutch guards, and dreading assassination, took the opportunity to renew his attempt to leave the kingdom. He proceeded on board a vessel in the Medway, and after some obstructions, arrived safely in France, where Louis readily afforded him an asylum.

The same day that the king left Whitehall for the last time, his nephew and son-in-law arrived at St James's. The public bodies immediately waited on him, to express their zeal for his cause; and such of the members of the late Parliaments as happened to be in town, having met by his invitation, requested him to

* The mother of the prince was Mary Stuart, eldest daughter of Charles I., and sister of James II. Failing the infant Prince of Wales, his own wife, and the Princess Anne, the two daughters of the king, he was the heir of the British crown.

latest write for a convention, in order to settle the nation. He was in the same manner, and for the same purpose, requested to call a convention in Scotland. The English convention met on the 22d of January 1689, and during its debates the prince maintained a magnanimous silence and neutrality. The Tory party, though it had joined in calling him over, displayed some scruples respecting the alteration of the succession, and seemed at first inclined to settle the crown on the princess, while William should have only the office of regent; but when this was mentioned to the prince, he calmly replied, that in that event, he should immediately return to Holland. A bill was then passed, declaring that 'James II., having endeavoured to subvert the constitution, by breaking the *original contract* between the king and people, and having withdrawn himself from the kingdom, has *abdicated* the government; and that the throne is thereby become *vacant*.' To the bill was added what was called a *Declaration of Rights*—namely, an enumeration of the various laws by which the royal prerogative and the popular liberties had formerly been settled, but which had been violated and evaded by the Stuart sovereigns. WILLIAM and MARY, having expressed their willingness to ratify this declaration, were proclaimed king and queen jointly—the administration to rest in William; and the convention was then converted into a Parliament.

In Scotland, where the Presbyterians had resumed an ascendancy, the convention came to a less timid decision. It declared that James, by the abuse of his power, had *forfeited* all right to the crown—a decision also affecting his posterity; and William and Mary were immediately after proclaimed. By a bill passed in the English Parliament, the succession was settled upon the survivor of the existing royal pair; next upon the Princess Anne and her children; and finally, upon the children of William by any other consort—an arrangement in which no hereditary principle was overlooked, except that which would have given a preference to James and his infant son.

By the Revolution, as this great event was styled, it might be considered as finally decided that the monarchy was not a divine institution, superior to human challenge, as the late kings had represented it, but one dependent on the people, and established and maintained for their benefit. Many advantages, of smaller importance, though of more direct and practical utility, resulted from the change. The Episcopal church, which in Scotland had occasioned incessant discontent and disturbance for the last twenty-eight years, was abolished in that kingdom, and the favourite Presbyterian forms were established, to the almost universal satisfaction of the nation. By an act passed in the English Parliament, the dissenters from the church in England were freed from the severities to which they had been exposed during the last two reigns. The royal revenue, which had formerly been fixed at the beginning of each reign, was now settled annually by the House of Commons, so that the king was more under the control of his people than formerly. The independence and impartiality of the judges were now secured by their being appointed for life, or during good behaviour, instead of being removable at the royal pleasure as heretofore. William is said to have wished to grant some further concessions in favour of the Dissenters, but was prevented by the powerful opposition which the Tory party presented in Parliament.

RESISTANCE IN SCOTLAND AND IRELAND.

The new government was at first extremely popular in Scotland; but one portion of the people was much opposed to it. This consisted of the Highland clans—a primitive race, unable to appreciate the rights which had been gained, prepossessed in favour of direct hereditary succession, and of such warlike habits, that though a minority, they were able to give no small trouble to the peaceful Lowlanders. When the Scottish convention was about to settle the crown on William and Mary, Viscount Dundee, formerly Graham of Claverhouse, and celebrated for his severity upon the recusant Presbyterians, raised an insurrection in the Highlands in favour of King James, while the Duke of Gordon, a Catholic, still held out Edinburgh Castle in the same interest. It was with no small difficulty that the new government could obtain the means of reducing these opponents. The castle, after a protracted siege, was given up in June (1689). General Mackay was despatched by William, with a few troops, to join with such forces as he could obtain in Scotland, and endeavour to suppress the insurrection in the Highlands. He encountered Dundee at Killiecrankie (July 27), and, though his troops were greatly superior in number and discipline, experienced a complete defeat. Dundee, however, fell by a musket-shot in the moment of victory, and his army was unable to follow up its advantage. In a short time the Highland clans were induced to yield a nominal obedience to William and Mary.

In Ireland, a much more formidable resistance was offered to the revolution settlement. Since the accession of James, the Romish faith might be described as virtually predominant in that kingdom. The laws against Catholics had been suspended by the royal authority, all public offices were filled by them, and though the established clergy were not deprived of their benefices, very little tithe was paid to them. The viceregal office was held by the Earl of Tyrconnel, a violent and ambitious young man, disposed to second the king in all his imprudent measures, and resolved, in the event of their failing, to throw the country into the hands of the French. The people at large, being chiefly Catholics, were warmly attached to the late sovereign, whose cause they regarded as their own.

Early in the spring of 1689, James proceeded from France to Ireland, where he was soon at the head of a large though ill-disciplined army. He immediately ratified an act of the Irish Parliament for annulling that settlement of the Protestants upon the lands of Catholics, which had taken place in the time of Cromwell, and another for attainting 2000 persons of the Protestant faith. The Protestants, finding themselves thus dispossessed of what they considered their property, and exposed to the vengeance of a majority over whom they had long ruled, fled to Londonderry, Inniskillen, and other fortified towns, where they made a desperate resistance, in the hope of being speedily succoured by King William. That sovereign now led over a large army to Ireland, and (July 1) attacked the native forces under his father-in-law at the fords of the river Boyne, near the village of Dunore, where he gained a complete victory.

James was needlessly dispirited by this disaster, and lost no time in sailing again to France. In reality, the Irish made a better appearance, and fought more vigorously, after the battle of the Boyne than before it. The Duke of Berwick, a natural son of James, and the Earl of Tyrconnel, still kept the field with a large body of cavalry, and the infantry were in the meantime effectually protected in the town of Limerick. William invested this town, and in one assault upon it lost 2000 men, which so disheartened him, that he went back to England, leaving his officers to prosecute the war. The Irish army afterwards fought a regular battle at Aghrim, when, partly owing to the loss of their brave leader, St Ruth, they were totally routed. The remains of the Catholic forces took refuge in Limerick, where they finally submitted in terms of a treaty which seemed to secure the Catholic population in all desirable rights and privileges. It was agreed that they should receive a general pardon; that their estates should be restored, their attainders annulled, and their outlawries reversed; that Roman Catholics should enjoy the same toleration as in the days of Charles II., and not be disturbed in the exercise of their religion; that they should be restored to all the privileges of subjects, on simply swearing allegiance to the king and queen; and that such as chose to follow the fortunes of James (of whom there was a vast number), should be conveyed to the continent at the expense of government.

King William, whose disposition was tolerant, promised to procure a ratification of this treaty by Parliament, but he was thwarted in his design. An act was passed in England making it necessary for all members of the Irish Parliament, and all persons filling civil, military, and ecclesiastical offices in Ireland, to take an oath abjuring the most important doctrines of the Catholic faith. After this had taken effect, in the filling of the Irish Parliament with Protestants, an act was passed by that assembly, professing to be a confirmation of the treaty of Limerick, but in reality putting the Catholics into a worse condition than before.

REIGN OF WILLIAM III.

Though all military opposition was thus overcome, William soon found difficulties of another kind in the management of the state. The Tories, though glad to save the established church by calling in his interference, had submitted with no good grace to the necessity of making him king; and no sooner was the danger past, than their usual principles of hereditary right were in a great measure revived. From the name of the exiled monarch, they now began to be known by the appellation of *Jacobites*. James's hopes of a restoration were thus for a long time kept alive, and the peace of William's mind was so much imbittered, as to make his sovereignty appear a dear purchase. Perhaps the only circumstance which reconciled the king to his situation, was the great additional force he could now bring against the ambitious designs of Louis XIV. Almost from his accession he entered heartily into the combination of European powers for checking this warlike prince, and conducted military operations against him every summer in person. The necessity of having supplies for that purpose rendered him unfit, even if he had been willing, to resist any liberal measures proposed to him in Parliament, and hence his passing of the famous Triennial Act in 1694, by which it was appointed that a new Parliament should be called every third year. In this year died Queen Mary, without offspring; after which William reigned as sole monarch.

While William was treated in England with less than justice, he lost all his popularity in Scotland, in consequence of two separate acts, characterised by great cruelty and injustice. An order had been issued, commanding all the Highland chiefs, under pain of fire and sword, to give in their submission before the last day of the year 1691. One individual—Macdonald of Glencoe—was prevented by accident from observing the day, and letters of fire and sword, signed by the king, were accordingly issued against him. The military party intrusted with this duty, instead of boldly advancing to the task, came among the clan as friends, partook of their hospitality and amusements, and never indicated their intentions till the morning of the 13th of February (1692), when they attacked the unsuspecting people in their beds, and mercilessly slew all that came in their way. Thirty-eight persons, including the chief and his wife, were slaughtered, and many others died in the snow, as they vainly tried to escape. A more atrocious action does not stain modern history, though the barbarous circumstances of the slaughter were more owing to feelings of private revenge on the part of some of the officials of government in Scotland, than to the intentions of William.

Two or three years after, the Scottish people began to turn their attention to commerce, by which they saw great advantages gained by neighbouring states, and they planned a colony on the Isthmus of Darien, which they thought might become an emporium for American and Indian produce. They subscribed among themselves for this purpose no less than £400,000; to which was added more than as much again by merchants in London and Holland. The jealousy of other trading companies, and the remonstrances of the Spaniards, who apprehended some interference with their colonies, induced the king to withdraw his countenance from the scheme, after he had sanctioned it by act of Parliament; but, nevertheless (1698), a gallant expedition was sent out by the Scots, who founded a town called New Edinburgh, about midway between Portobello and Carthagena, and under the ninth degree of latitude. During the winter months, everything seemed likely to answer the expectations of the colonists; but summer brought disease, and on their provisions running low, they found, to their infinite consternation, that they could get no supplies, the Spanish and British colonists of the neighbouring countries being forbidden to deal with them. In May and September 1699, ere intelligence of these circumstances could reach home, two other expeditions had sailed, containing 1800 men, who were involved on their arrival in the same disasters. After disease had swept off many hundreds, the remainder were attacked by the Spaniards, who pretended a right to the country; and to these haughty enemies, who were countenanced in their proceedings by the British sovereign, the unfortunate colony was obliged to surrender. Very few ever regained their native country, and the large sums vested in the undertaking were irrecoverably lost. The massacre of Glencoe, and the Darien expedition, excited feelings of the most intense bitterness against the king in the breasts of the Scottish nation, among whom the Jacobite party thenceforward began to assume a formidable appearance.

The peace of Ryswick, concluded in 1697, by which the French power was confined to due limits, permitted William to spend the concluding years of his reign in peace. In 1700, in consideration that he and his sister-in-law Anne had no children, the famous Act of Succession was passed, by which the crown, failing these two individuals, was settled upon the next Protestant heir, Sophia, Duchess of Hanover, daughter of Elizabeth, the eldest daughter of James I.

About this time the causes of a new war took their rise in certain disputes respecting the succession to the crown of Spain. The title to that sovereignty, in the event of the death of the existing king without heirs, was claimed by the king of France, the elector of Bavaria, and the emperor of Germany, through various female lines of descent. A treaty, to which England was a party, was entered into for preventing the whole from falling into the hands of the reigning family of France, whose possessions would then have been so great as to be inconsistent, it was thought, with the independence and safety of the neighbouring states. At the death of the king of Spain, a will was produced, in which it appeared that he had appointed the Duke of Anjou, second son of the dauphin, to be his successor. The French king lost no time in enforcing the pretensions of his grandson, who, under the title of Philip V., became the founder of the Bourbon dynasty in Spain.

About the same time (September 1701) James, the exiled English king, died at St Germains, leaving his pretensions to his son, James, Prince of Wales, now a boy of thirteen years of age, and henceforth generally recognised in Britain by the epithet of the *Pretender*. Without regard to the treaty of Ryswick, Louis XIV. acknowledged this young person as JAMES III., King of Great Britain, by which he added greatly to the hostile feeling which his other proceedings had already created in the British king and people. A war was accordingly in preparation, when King William died (March 2, 1702), in consequence of a fall from his horse.

William was a prince of commanding ability, particularly in military affairs. His ruling sentiment was a wish to reduce the power of the king of France, which he was able in no small degree to effect. His person was thin and feeble, and his ordinary demeanour was reputed cold, silent, and somewhat repulsive. It was only in battle that he ever became animated or easy. He was a conscientious man, of sober and even kindly domestic habits, and sincerely attached to toleration in religion. But for the questionable act of expelling his uncle and father-in-law from the throne, and his concern in the affairs of Glencoe and Darien, no serious blot of any kind would have rested upon his name, either as a public or private person.

The reign of King William is remarkable for the

first legal support of a standing army, and for the commencement of the national debt. It is also distinguished by the first establishment of regular banks for the deposit of money, and the issue of a paper currency. Formerly, the business of banking, as far as necessary, was transacted by goldsmiths, or through the medium of the public Exchequer, by which plans the public was not sufficiently insured against loss. In 1695, the first public establishment for the purpose, *the Bank of England*, was established by one William Paterson, a scheming Scotsman; and next year the Bank of Scotland was set on foot by one Holland, an English merchant. The capital in the former case being only £1,200,000, and in the latter the tenth part of that sum.

In the reign of King William flourished Sir William Temple, an eminent political and philosophical writer, to whom is usually assigned the honour of first composing the English language in the fluent and measured manner which afterwards became general. The most profound philosophical writer of the age was John Locke, author of an Essay on the Human Understanding, an Essay on Toleration, and other works. Bishop Tillotson stands high as a writer of elegant sermons. The greatest name in polite literature is that of John Dryden, remarkable for his energetic style of poetry, and his translations of Virgil and Juvenal.

QUEEN ANNE—MARLBOROUGH'S CAMPAIGNS.

William was succeeded by his sister-in-law, ANNE, second daughter of the late James II.; a princess now thirty-eight years of age, and chiefly remarkable for her zealous attachment to the church of England. The movement against the king of France had not been confined to Great Britain; it was a combination of that power with the emperor of Germany and the states of Holland. Queen Anne found it necessary to maintain her place in the Grand Alliance, as it was termed; and the Duke of Marlborough was sent over to the continent with a large army to prosecute the war in conjunction with the allies. Now commenced that career of military glory which has rendered the reign of Anne and the name of Marlborough so famous. In Germany and Flanders, under this commander, the British army gained some signal successes, particularly those of Blenheim and Ramillies; in Spain, a smaller army, under the chivalrously brave Earl of Peterborough, performed other services of an important kind. The war, however, was one in which Britain had no real interest—for it has been seen that Spain has continued under a branch of the House of Bourbon without greatly endangering other states.

A party, consisting chiefly of Tories, endeavoured, in 1706, to put an end to the war; and France was so much reduced in strength, as to concede all the objects for which the contest had been commenced. But the people were so strongly inspired with a desire of humiliating France, which in commerce and religion they considered their natural enemy, that some ambitious statesmen of a contrary line of politics were enabled to mar the design of a treaty. Among these was the Duke of Marlborough, who, being permitted to profit not only by his pay, but by perquisites attached to his command, wished the war to be protracted, merely that he might make his enormous wealth a little greater. It was in consequence of these unnecessary interferences with continental politics, urged chiefly by the people, and by a class of statesmen popular at the time, that the first large sums of the national debt were contracted.

UNION OF ENGLAND AND SCOTLAND.

Since their religious enthusiasm had been laid at rest by the Revolution Settlement, the Scottish people had been chiefly animated by a desire of participating in the commerce of England. The treatment of their expedition to Darien had now inspired them with a bitter feeling against their southern neighbours, and they resolved to show their power of counter-annoyance by holding up threats of dissenting from England in the matter of the succession. In 1703, their Parliament passed the famous *Act of Security*, by which it was ordained that the successor of her majesty in Scotland should not be the same with the individual adopted by the English Parliament, unless there should be a free communication of trade between the countries, and the affairs of Scotland thoroughly secured from English influence. Another act was at the same time passed for putting the nation under arms. The English ministers then saw that an incorporating union would be necessary to prevent the Pretender from gaining the Scottish crown, and to protect England from the attacks of a hostile nation. For this purpose they exerted themselves so effectually in the Scottish Parliament, as to obtain an act, enabling the queen to nominate commissioners for the arrangement of a union. The men appointed, thirty on each side, were, with hardly an exception, the friends of the court and of the Revolution Settlement; and the treaty accordingly was drawn up without difficulty.

In October 1706, this document was submitted to the Scottish Parliament, and was found to contain the following principal points:—That the two nations were to be indissolubly united under one government and legislature, each, however, retaining its own civil and criminal law; the crown to be in the House of Hanover; the Scottish Presbyterian church to be guaranteed; forty-five members to be sent by the Scottish counties and burghs to the House of Commons, and sixteen elective peers to be sent to the Upper House by the nobles; the taxes to be equalised, but, in consideration of the elevation of the Scotch imposts to the level of the English (for the latter people already owed sixteen millions), an equivalent was to be given to Scotland, amounting to nearly four hundred thousand pounds, which was to aid in renewing the coin, and other objects. These terms were regarded in Scotland as miserably inadequate; and the very idea of the loss of an independent legislature and a place among governments, raised their utmost indignation. Nevertheless, by dint of bribery, the union was carried through Parliament; and from the 1st of May 1707, the two countries formed one state, under the title of the Kingdom of Great Britain.

HIGH CHURCH ENTHUSIASM.

Since the Revolution, the Whigs might be considered as the predominant party in England. They almost exclusively constituted the ministries, and a large majority in the Parliaments, of King William. The sentiments of the queen were of a different cast from theirs. She disrespected the Revolution Settlement, by which she reigned; and was more zealously attached than they to the church of England, in all its doctrines, practices, and privileges. As the remembrance of the errors of King James faded from the public recollection, or were put out of view by more recent grievances, the people began to partake more generally of the Tory spirit. The Parliament which they returned at the beginning of the new reign, contained a much larger admixture of that party than the former one. The Tory feeling of both people and Parliament chiefly took the direction of a strong attachment to the church of England, which they wished to maintain in uncompromising supremacy, and in all its privileges; while the Whig party, in general, were favourable to the toleration called for by the dissenters. The distinction of High Church and Low Church now became conspicuous, the one phrase implying the ecclesiastical views of the Tories, while the other referred to those of the Whigs. In this Parliament the House of Commons passed a bill against *occasional conformity*, by which penalties were imposed on all persons in office who should attend dissenting places of worship; but it was thrown out by the Upper House, in which the bishops created by William voted against it.

An imprudent act of the ministry raised the High Church enthusiasm to an extraordinary height. A

divine of inferior note, named Henry Sacheverell, had preached a violent sermon, in which he seemed to call upon the people to take up arms in defence of their endangered church. The ministers were so weak as to give this man a solemn trial, during which the people rose so tumultuously in his favour, that, though declared guilty, it was found impossible to inflict upon him more than a nominal punishment. After the trial, he received more marks of public reverence and honour than were ever bestowed on the greatest national benefactor. In proportion to the popularity of Dr Sacheverell, was the loss of public favour experienced by the Whig party. About the same time, through some court intrigues, they forfeited all remaining favour with their royal mistress. Mrs Masham, a lady of the court, and favourite of the queen, had contrived to introduce into the cabinet two Tory statesmen, Mr Robert Harley, afterwards Earl of Oxford, and Mr Henry St John, afterwards Lord Bolingbroke. These gentlemen having attempted to set up a party for themselves, their superior, Lord Godolphin, dismissed them, to the great displeasure of Queen Anne, who now resolved to get quit of the Whig party at the first opportunity. In August 1710, Harley and St John came into power, at the head of a decidedly Tory ministry, which, though of brief duration, was destined to make an important figure in the national history. The queen at the same time called a new Parliament, which proved to be almost wholly composed of the Tory party.

PEACE OF UTRECHT—DEATH OF QUEEN ANNE.

The members of the new cabinet immediately applied themselves, though very secretly, to the business of bringing about a peace. When their plans were matured, the consent of the House of Commons was easily gained; but the Lords having shown some reluctance, it was found necessary to create twelve new peers, in order to overpower the sense of that part of the legislature. After a tedious course of negotiation, Britain and Holland concluded a peace at Utrecht (1713), leaving the emperor of Germany still at war. By this arrangement, Philip V. was permitted to retain Spain and the Indies, but no other part of the dominions which his ambitious grandfather had endeavoured to secure for him; and it was provided that he and his descendants should never inherit the kingdom of France, nor any future king of France accede to the crown of Spain. Britain obtained nothing tangible by all her exertions, except the possession of Gibraltar and Minorca, and the privilege of being exclusively employed to carry slaves to the Spanish American colonies. It has justly been considered a stain upon the nation, that it should have concluded a separate peace under such clandestine circumstances, as the interests of the other belligerent parties were thereby greatly injured. For the gratification of their High Church supporters, the ministers obtained an act for preventing dissenters from keeping schools, and another for establishing church patronage in Scotland, the former of which was repealed in the following reign.

It is believed that Queen Anne and her Tory ministers were in secret willing to promote the restoration of the main line of the Stuart family, and Harley and St John are now known to have intrigued for that purpose. But before any plan could be formed, the queen took suddenly ill and died (August 1, 1714), when the ministers had no alternative but to proceed according to the Act of Settlement. The Electress Sophia being recently dead, her son, the elector, was proclaimed under the title of GEORGE I.

The reign of Queen Anne is not more distinguished by the wonderful series of victories gained by Marlborough, than by the brilliant list of literary men who now flourished, and who have caused this to be styled the Augustan age of English literature, as resembling that of the Roman Emperor Augustus. Alexander Pope stands unrivalled in polished verse on moral subjects. Jonathan Swift is a miscellaneous writer of singular vigour and an extraordinary kind of humour. Joseph Addison wrote on familiar life and on moral and critical subjects with a degree of elegance before unknown. Sir Richard Steele was a lively writer of miscellaneous essays. This last author, with assistance from Addison and others, set on foot the 'Tatler,' 'Spectator,' and 'Guardian,' the earliest examples of small periodical papers in England, and which continue to this day to be regarded as standard works. Cibber, Congreve, Vanburgh, and Farquhar, were distinguished writers of comedy; and Prior, Philips, and Rowe, were pleasing poets. In graver literature, this age is not less eminent. Dr Berkeley shines as a metaphysician; Drs Sherlock, Atterbury, and Clark as divines; and Bentley as a critic of the Roman classics.

ACCESSION OF THE HOUSE OF HANOVER—REBELLION OF 1715–16.

The new sovereign lost no time in coming over to Britain, and fixing himself in that heritage which his family has ever since retained. He was fifty-four years of age, of a good, though not brilliant understanding, and very firm in his principles. Knowing well that the Whigs were his only true friends, he at once called them into the administration. It was the custom of that period for every party, on getting into power, to try to annihilate their opponents. Not only were the whole Tory party insulted by the king, but a committee of the House of Commons was appointed to prepare articles of impeachment against Oxford, Bolingbroke, the Duke of Ormond, and the Earl of Strafford. Bolingbroke, perceiving his life to be in danger, fled to the continent; and his attainder was in consequence moved and carried by his rival Walpole. Ormond suffered a similar fate. Oxford, after a protracted trial, was only saved in consequence of a difference between the Lords and Commons.

During the first year of King George, the Tories kept up very threatening popular disturbances in favour of High Church principles; but the Whigs, gaining a majority in the new House of Commons, were able to check this a little by the celebrated enactment called the *Riot Act*, which permits military force to be used in dispersing a crowd, after a certain space of time has been allowed. Disappointed in their hopes of office and power, and stung by the treatment of their leaders, the Tories resolved to attempt bringing in the Pretender by force of arms. With an eager hopefulness, which for a long time was characteristic of the party, they believed that all England and Scotland were ready to take up arms for the Pretender, when in reality there was but a limited portion of the people so inclined, and that portion unwilling to move if they saw the least risk or danger. Blind to these circumstances, and without design or concert, they commenced the unfortunate civil war of 1715.

The Earl of Mar, who had been a secretary of state in the late administration, raised his standard in Braemar (September 6), without any commission from the Pretender, and was soon joined by Highland clans to the amount of 10,000 men, who rendered him master of all Scotland north of the Forth. There, however, he weakly permitted himself to be cooped up by the Duke of Argyle, who, with a far less numerous force, had posted himself at Stirling. Mar expected to be supported by an invasion of England by the Duke of Ormond, and a rising of the people of that country. But the duke completely failed in his design, and no rising took place, except in Northumberland. There Mr Foster, one of the members of Parliament for the county, and the Earl of Derwentwater, with some other noblemen, appeared in arms, but unsupported by any considerable portion of the people. Mar detached a party of 1800 foot, under Mackintosh of Borlum, to join the Northumbrian insurgents, who complained that they had no infantry. The junction was managed with great address; and at the same time some noblemen and gentlemen of the south of Scotland attached themselves to the southern army. The government was ill provided with troops; but it nevertheless sent

such a force against Mr Foster, as obliged him to retire with his men into the town of Preston, in Lancashire, where, after an obstinate defence, the whole party (November 13) surrendered themselves prisoners at the king's mercy. On the same day, the Earl of Mar met the Duke of Argyle at Sheriffmuir, near Dumblane, where a battle was fought, in which, after the manner of the battles in the civil war, the right wing of each army was successful, but neither altogether victorious. The duke withdrew in the face of his enemy to Stirling, and the earl retired to Perth, resolved to wait for the news of an invasion from France, and for the arrival of the Pretender, whom he had invited to Scotland.

Mar did not for some time become aware how little reason he had to expect support from France. Louis XIV., upon whom the hopes of the party greatly rested, had died in September, leaving the government to the Regent Orleans, who had strong personal reasons for wishing to cultivate the good-will of the British monarch, and of course declined to assist in the present enterprise. The Pretender, nevertheless, sailed for Scotland, and on the 22d of December, arrived incognito at Peterhead, bringing nothing but his own person to aid his adherents. Mar, who had already attempted to negotiate a submission to the government, brought him forward to Perth, where he was amused for some time with preparations for his coronation. But before he had been many days there, the Duke of Argyle found himself in a condition to advance against the insurgent force; and on the 30th of January 1716, this unfortunate prince commenced a retreat to the north, along with his dispirited army. On the 4th of February, he and the Earl of Mar provided for their own safety by going on board a vessel at Montrose, and setting sail for France: the army dispersed itself into the Highlands. For this unhappy appearance in arms, the Earl of Derwentwater, Viscount Kenmure, and about twenty inferior persons, were executed; forty Scottish families of the first rank lost their estates, and many excellent members of society became exiles for the remainder of their lives.

CHARACTER OF THE GOVERNMENT UNDER GEORGE I.

The suppression of this insurrection, and the ruin of so many Tory leaders, tended to increase the power of the Whig party, and the stability of the Hanoverian dynasty. The government, nevertheless, acted under considerable difficulties, as they were opposed by the majority of the clergy and country gentry, as well as by the whole of the mob feeling, except in the large commercial towns. To avoid the hazard of too often appealing to the people, they carried, in 1716, a bill for repealing King William's Triennial Act, and protracting the present and all future Parliaments to a duration of seven years. The chief popular support of the government was in the dissenters, and the middle classes of the community.

From the peace of Utrecht, Britain remained free from foreign war for nearly thirty years, excepting that, in 1719, the ministry was called on to interfere for the repression of an attempt on the part of Spain to regain her Italian territories. A Scotsman, named Law, who had become comptroller-general of France, and amused that country with financial schemes, which at first promised to enrich, but finally almost ruined the country, was the means in 1720 of inspiriting the British people with a similar visionary project, called the South Sea Scheme. This might be described as a joint-stock company, professedly trading in the South Seas, but chiefly engaged in a scheme for managing the national debt. It seemed for a time to prosper, and many realised large fortunes by selling their shares at a premium to others; but in a short time its unsoundness was discovered, the price of shares fell, and thousands were utterly ruined. With great difficulty, and by an extremely complicated adjustment, the House of Commons equalised as nearly as possible the state of gain and loss among the innocent parties, and credit was restored. Sir Robert Walpole, who was chiefly concerned in effecting this arrangement, became premier and chancellor of the Exchequer, and for upwards of twenty years from that period (April 1721), he must be looked on as the prime mover and manager of the public affairs.

At the beginning of the reign of George I. the national debt amounted to fifty-three millions, and owing to there having been no war, it was rather less at the time of the king's death. The annual expenditure of the state was about seven millions, or scarcely a seventh part of what it now is. The commerce and manufactures of England continued to advance steadily during this reign; but Scotland and Ireland remained in an unimproved state. Roads were now for the first time made in the Highlands. The chief literary men were the same as those who had come into repute in the time of Queen Anne: in addition to them, John Gay is to be reckoned amongst the poets, and Waterland and Lardner amongst the divines. This was also more particularly the age of Daniel Defoe, a dexterous writer of pamphlets on the Nonconformist side, but far more noted in later times on account of his admirable tale of Robinson Crusoe.

GEORGE II.—WAR WITH SPAIN AND FRANCE.

George I., at his death in 1727, was succeeded by his son, GEORGE II., a prince of moderate abilities, but conscientious, and free from all gross faults. In the early part of his reign, Walpole effected some useful measures, and upon the whole was a vigorous and enlightened administrator of public affairs, though nothing can justify the extensive system of bribery by which alone he pretended to manage the House of Commons. After a peace of extraordinary duration, he was urged, much against his will, into a contest with Spain, on account of some efforts made by that country to check an illicit trade carried on by British merchants in its American colonies. In searching vessels for the prevention of this traffic, the Spaniards had made some trifling aggressions; and British spirit took fire at the indignity of being liable to a search by any neighbouring state, even for the prevention of a notorious breach of treaty. The community therefore demanded a war; and the minister, with great reluctance, was obliged to comply. One fleet, under Admiral Haddock, was sent to cruise off the coast of Spain; and another, under Admiral Vernon, was sent against the American colonies. The latter gained lustre by taking the important town of Portobello. Another and larger expedition, with 10,000 soldiers, was then sent to reinforce Vernon; but owing to disputes between him and the commander of the troops, no further triumphs were gained. A timid, ill-concerted, and ill-conducted attack on the fortifications of Carthagena, lost Britain a large body of men. Meantime, a third fleet, under Anson, sailed to the eastern coast of Spanish America, in order to co-operate with Vernon; but only one of the vessels reached its destination. Anson, thus reduced in naval force, took several prizes off Chili, and plundered the town of Paita, but could venture upon no more hazardous enterprise. He cruised across the Pacific in the hope of meeting one of the Spanish galleons, which usually contained great quantities of bullion; but did not succeed, till, on his return from refitting at Canton, he took the Manilla transport, with treasure to the amount of three hundred thousand pounds. Though he had failed in all the proper objects of his expedition, the money he brought to the public treasury caused him to be very well received by the people; while the flagrant mismanagement at Carthagena was the subject of general execration.

The Spanish war now languished for some time, while the attention of Britain was attracted to the proceedings of France. After the death of the Emperor Charles VI. of Germany, his dominions fell by inheritance to his daughter, the celebrated Maria Theresa, Queen of Hungary. She was opposed in this succession by the sovereigns of France, Saxony, and Bavaria, all of whom

pretended to have some claims on her dominions. A war was commenced against her; the elector of Bavaria was crowned emperor, under the title of Charles VII.; and such was the success of the French arms, that she was soon reduced to the greatest distress. With this quarrel Britain had little reason for interfering; but the king thought his dominions in Germany endangered, and the people were animated by their usual hostility to the French. Walpole, being conscientiously opposed to the war, allowed himself to be driven from office (February 1742), though he still continued to enjoy the respect of the king.

The ministry was recruited by the most popular men of the late minority, among whom the most conspicuous were Lord Carteret and the Earl of Bath. To the surprise of the nation, this set of statesmen opposed, now they were in power, all the improvements they had lately professed to clamour for, and seemed even more willing than their predecessors to carry out the policy which was suggested by the king's anxiety on account of his foreign dominions. About the time when Great Britain entered into this struggle, the affairs of the Hungarian queen took a surprising turn, and her armies, under her husband the Grand Duke of Tuscany, Prince Charles of Lorraine, and other eminent commanders, began to drive her enemies from her dominions. France, having lost 100,000 men in the contest, sued for peace; but this the queen haughtily refused, in the hope of gaining still greater triumphs by means of Britain. The aid of that power, as it turned out, was of little service to the queen. The Earl of Stair had permitted his army to get into a position of great difficulty at Aschaffenburg, on the Upper Maine, and but for a blunder of the French, it would probably have been starved into a surrender, along with the king and prime minister (Cartaret), both of whom had recently joined it. The blunder consisted in an attack made by the Duke of Grammont, with 30,000 troops, upon the British and Hanoverian infantry, upon a plain near the village of Dettingen (June 16, 1743). The infantry, cheered by the presence of the king, who rode between the lines with his sword drawn, received the charge of the French cavalry with great firmness, and compelled them to retreat—a movement which communicated a panic to the whole French army, and might have been attended with the most disastrous consequences, if the British monarch would have permitted his advantage to be followed up. This was the last occasion of a king of Great Britain appearing on the field of battle.

The death of the Emperor Charles VII., for whom this great European contest appeared to have taken its rise, might have now given an opportunity for the cessation of hostilities; but the French thought the war still necessary, in order to prevent the husband of Maria Theresa from being elected emperor, and the British were still animated by their usual antipathy to the French. A campaign was therefore opened in Flanders, the troops of the French nation being commanded by Count Saxe, distinguished for military genius and experience; while the British and Hanoverian army was under the charge of the young Duke of Cumberland, second son to the king. To animate the French troops, their sovereign (Louis XV.) and the dauphin attended the camp. The French having invested Tournay, it was resolved by the English to hazard a battle, in order to save that strong city.

The rencounter took place (May 1745) at Fontenoy, near the bridge of Colonne. The British infantry advanced under Cumberland, and notwithstanding a tremendous fire, which swept them off in whole ranks, attacked the centre of the position of the French army, which they beat back in so furious a style, that Saxe advised the king to retire for the safety of his person. Louis bravely refused to stir, being apprehensive that a retrograde motion on his part would decide the day against his army. Ashamed to desert their sovereign, the French returned to the charge; the cavalry renewed their efforts, and other circumstances conspired to give a turn to the battle. The British cavalry were prevented by a mistake from giving their support to the infantry; and the Dutch and Austrian part of the army was found totally ineffective. Assailed on all sides, fatigued with their great exertions, and galled by the French batteries, the infantry was obliged to retire with a loss of 7000 men, after having beaten every regiment in the French army. The Duke of Cumberland, though able to withdraw in good order, did not venture after this disaster to face the enemy during the whole campaign. Nevertheless, the queen of Hungary at this time gained the summit of her wishes, by the election of her husband to the imperial throne.

REBELLION OF 1745–46.

The Pretender had married, in 1719, the Princess Clementina Sobieski of Poland, and was now the father of two sons in the bloom of youth, the elder of whom has been distinguished in history by the title of Prince Charles Stuart. The misfortunes of the British arms on the continent, and the dissensions which prevailed among the people and the Parliament, encouraged this prince to make an attempt to recover the throne of his ancestors. In 1744, he had been furnished by France with a large fleet and ample stores to invade the British dominions, but had been driven back by a storm, and prevented from again setting sail by a superior fleet under Sir John Norris. The object of France in this enterprise was to produce a diversion in favour of her own army in the Netherlands. At present, in consequence of the victory of Fontenoy, such an enterprise was no longer necessary; but though the French monarch would not grant him any further supply, Charles resolved to make the proposed attempt, trusting solely to the generosity and valour of his friends in Britain. He therefore landed from a single vessel, with only seven attendants, on the coast of Inverness-shire, where the clans most attached to his family chiefly resided. By merely working upon the ardent feelings of the Highland chiefs, he soon induced several of them to take up arms, among whom were Locheil, Clanranald, Glengarry, and Keppoch.

On the 19th of August 1745 he raised his standard at Glenfinnan, within a few miles of the government station of Fort William, and found himself surrounded by about 1500 men. The government was at first inclined to disbelieve the intelligence of these proceedings, but was soon obliged to take steps for its own defence. A reward of thirty thousand pounds was offered for the head of the young prince, who, with all his family, was under attainder by act of Parliament; and Sir John Cope, commander of the forces in Scotland, was ordered to advance with what troops he had into the Highlands, and suppress the insurrection. Cope proceeded on this mission with about 1400 infantry; but on finding the Highlanders in possession of a strong port near Fort Augustus, he thought it necessary to go aside to Inverness. Charles, taking advantage of this ill-advised movement, immediately poured his motley followers down into the Lowlands, gaining accessions everywhere as he advanced; and there being no adequate force to oppose him, he took possession successively of Perth and Edinburgh.

Cope now transported his troops back to Lothian by sea, and on the 21st September, a rencontre took place between him and Charles at Prestonpans. Seized with a panic, the royal troops fled disgracefully from the field, leaving the prince a complete victory. With the lustre thus acquired by his arms, he might have now, with four or five thousand men, made a formidable inroad into England. Before he could collect such a force, six weeks passed away, and when at length (November 1) he entered England, a large body of troops had been collected to oppose him. After a bold advance to Derby, he was obliged by his friends to turn back. At Stirling he was joined by considerable reinforcements, and on the 17th of January 1746, a battle took place at Falkirk between him and General Hawley, each numbering about 8000 troops. Here Charles was again successful; but he was unable to make any use

of his victory, and soon after found it necessary to withdraw his forces to the neighbourhood of Inverness, where he spent the remainder of the winter. The Duke of Cumberland now put himself at the head of the royal troops, which had been augmented by 6000 auxiliaries under the Prince of Hesse. During the months of February and March, the Highland army was cooped up within its own territory, by the Hessians at Perth, and the royal troops at Aberdeen. At length, April 16, Prince Charles met the English army in an open moor at Culloden, near Inverness, and experienced a total overthrow. He had himself the greatest difficulty in escaping from the country, and the Highlands were subjected for several months to the horrors of military violence in all its worst forms.

To complete the subjugation of this primitive people, the hereditary jurisdictions under which they and the rest of the people of Scotland still lived, and by which the nobles and gentry were enabled to administer justice at their own discretion, were abolished by act of Parliament. Another act put an end to the tenure of ward-holdings, by which the land-proprietors were enabled to command the personal services, in peace and war, of those who lived on their estates. A third act prohibited the use of tartan and the ancient Highland fashion of clothes, which were supposed to have the effect of keeping alive the warlike spirit of the mountaineers. The two former of these measures, in connection with the suppression of the Stuart cause, and some other circumstances, produced a marked improvement in the social state of the Scottish people. The government, it must be remarked, had hitherto acted towards Scotland in a harsh and partial spirit. Suspected and hated by the ruling faction, the Highlanders had every temptation to continue in adherence to the exiled family. But when the government began to treat them in a milder spirit, and admitted them to the army and other branches of the public service, their naturally generous and loyal feelings were turned as zealously in favour of the new dynasty as they ever had been in favour of the old. The middle of the eighteenth century may be described as the time when Scotland, after a long period of indolence and poverty, first began to make advances towards that equality with England, in respect of comfort and prosperity, which it has since attained.

PEACE OF AIX-LA-CHAPELLE.

During the remainder of the war in which Britain and other powers were now engaged with France, the latter was generally successful by land, and unfortunate at sea, the contrary being the case with Britain. In 1748, the two countries found, after nine years of contention, that their losses were equal, though in different departments of their strength. Thirty millions had been added to the national debt of Britain, and France had expended an equal sum. They therefore agreed, by a treaty formed at Aix-la-Chapelle, mutually to restore their respective conquests, and to go back to exactly the same condition in which they stood before the war. A more signal illustration could have scarcely been held forth of the important truth—that war is to the parties in general only a means of waste and loss, and can be of no benefit to any man except at the expense of his neighbour.

COLONIES AND DEPENDENCIES OF BRITAIN—THE SEVEN YEARS' WAR.

For several years after this period the national resources underwent rapid improvement. The most respectable minister who immediately followed Walpole, was the Honourable Henry Pelham, first lord of the Treasury and chancellor of the Exchequer, whose commercial and financial schemes were usually very successful. Since the reign of Elizabeth, the British had been active in planting and rearing colonies, of which a considerable number now existed in the West Indies and in North America. The East India Company had also obtained large possessions in Hindoostan, which proved the source of great wealth to Britain. The exclusive spirit in which Britain managed the commerce of those territories provoked the cupidity of the French, who commenced a system of aggression both in India and North America. They, in particular, drew a line of forts along the back settlements of the whole range of the American colonies, from the Gulf of St Lawrence to the Mississippi, so as to prevent the settlers from advancing beyond the Appalachian mountains.

For two or three years the British government suffered these aggressions, and even insults of a more decided nature, to pass unresented; but at length it was determined, in 1756, to proclaim war. A campaign of a novel and difficult character was opened in North America, for the purpose of driving the French from their forts. The first movements were attended with defeat and disaster. The French had gained the exclusive affection of the native Indians, who proved a dangerous and barbarous enemy to the British. Several of the forts were attacked, but without success; in the assault upon Ticonderago, 2000 men were killed. At length, on the accession of Mr William Pitt (afterwards Earl of Chatham) to the office of secretary of state, a more auspicious era commenced. The British troops and provincials became more experienced in the nature of the service. One after another, the principal forts fell into their hands; and a diversion was created by an attack upon Canada. In September 1759, General Wolfe reduced the town and fort of Quebec, though at the expense of his own life; and the whole colony soon after submitted to the British arms.

Meanwhile, Colonel Clive had been equally successful in the East Indies. He had destroyed the French settlement at Pondicherry, thereby securing to his country the whole coast of Coromandel; and by his famous victory at Plassey (June 26, 1756), over a combination of French and native forces, he laid the foundation of the great territorial power which the British have since acquired in Hindoostan. Thus the French, instead of gaining the colonies of other nations, ended by losing some of their own.

While Britain was thus successful in two remote quarters of the world, she experienced a different fortune in Europe. Austria, Russia, and Poland, had combined with France against the new and rising power of Prussia, which was at present directed by Frederick II., commonly called Frederick the Great. Britain on this occasion became the ally of the Prussian monarch, not from any regard to her own interests, but in order that the king might be able to protect his Hanoverian dominions. Immense sums of money were raised for the purpose of paying the troops of those countries which the king was anxious to defend; and the Duke of Cumberland was appointed their commander. This prince was so unfortunate (September 1757) as to bring an army of 40,000 men into an angular piece of country, from which there was no escaping, so that the whole were obliged to lay down their arms to the French, who then became masters of Hanover. Notwithstanding this failure on the part of his ally, Frederick was able, by his extraordinary military genius, and by British subsidies, to defend his dominions for several years against all the forces that Austria, France, and Russia, could bring against him. In the midst of this war (October 25, 1760), George II. died suddenly, in the seventy-seventh year of his age, and was succeeded by his grandson GEORGE III., then only in his twenty-third year.

MISCELLANEOUS CIRCUMSTANCES CONNECTED WITH THE REIGN OF GEORGE II.

The chief domestic event of the reign of George II. was the rise of the religious sect called Methodists. The church had for a considerable time been in a languid state; amongst the community there was little religious feeling of a fervid character; and at no previous time were there so many conspicuous writers against the main doctrines of Christianity. John Wesley, a clergyman of the established church, and several other indi-

viduals of an enthusiastic turn of mind, were prompted by these circumstances to attempt to rouse a more zealous piety amongst the people; and in this object they were surprisingly successful. Another clergyman named Whitefield, gifted with oratorical powers which gave him great command over the feelings of an audience, proved of much service as an itinerant preacher in working this reformation. The consequence of these exertions was the organisation of a new religious body, commonly called Methodists, comprehending a vast number of congregations in all parts of the kingdom, as well as in the American colonies.

Newspapers first acquired political importance in this reign. They originated in the time of the Commonwealth, but none of a regular periodical nature appeared till after the Restoration, when a busy writer named Roger L'Estrange established in London a weekly one called 'The Intelligencer.' Till the Revolution, such small and unimportant newspapers as existed, were trammelled by a licensing power and censorship. When these restrictions were removed, newspapers increased in number, till, in 1709, they were again restricted by the imposition of a penny stamp. In those days newspapers were chiefly conducted by a set of mean and poor writers, to whom the term 'Grub Street authors' was generally applied, from many of them living in that wretched part of London. The influence which newspapers were calculated to have over the public mind, was first recognised by Sir Robert Walpole, who, while he never thought of giving the least encouragement to literature on its own account, liberally pensioned various editors who supported his government. About the beginning of this reign there were in London one daily paper, fifteen three times a week, and one twice a week, besides a few country papers. A monthly pamphlet, begun in 1731 by Edward Cave, a London bookseller, under the name of the 'Gentleman's Magazine,' was composed of the best articles from the newspapers; and thus originated the periodical works termed magazines and reviews, which are now conspicuous as vehicles of light literature and political discussion.

The peculiar literary genius of the age was shown in the fictitious prose writings of Fielding, Smollett, and Sterne, and in the pictures of Hogarth, all of which represent the national character in its greatest breadth. The novels of Richardson are equally accurate as descriptions of manners, but contain no trace of the same humour. Next in distinction to these writings must be placed the essays of John Hawkesworth and Samuel Johnson, the latter of whom did a great service to literature in compiling a dictionary of the English language. James Thomson, William Collins, and Thomas Gray, rank high as poets. Carte and Echard were respectable historical writers; and philosophy was cultivated by Francis Hutcheson and David Hartley. Drs Conyers Middleton, Joseph Butler, and Isaac Watts, were the principal writers on religious subjects.

GEORGE III.—BUTE ADMINISTRATION—PEACE OF 1763.

Soon after his accession, George III. espoused the Princess Charlotte of Mecklenburg-Strelitz, by whom he had a large family. One of his earliest political measures was to confer one of the state-secretaryships upon the Earl of Bute, a Scottish nobleman of Tory or Jacobite predilections, who had been his preceptor, and possessed a great influence over his mind. This, with other alterations, infused a peaceful disposition into his majesty's counsels, which was not much relished by Mr Pitt. That minister, having secretly discovered that Spain was about to join France against Britain, and being thwarted in the line of policy which he consequently thought it necessary to assume, retired with a pension, and a peerage to his wife; after which the ministry was rendered still less of a warlike temper. A negotiation for peace was entered into with France, which offered, for that end, to give up almost all her colonial possessions. The demands of the British were, however, rather more exorbitant than France expected, and not only was the treaty broken off, but Spain commenced those hostilities which Mr Pitt had foretold. Nevertheless, Britain continued that splendid career of conquest which, except at the beginning, had been her fortune during the whole of this war. In a very few months Spain lost Havana, Manilla, and all the Philippine Isles. The Spanish forces were also driven out of Portugal, which they had unjustly invaded. At sea the British fleets reigned everywhere triumphant, and at no former period was the country in so proud a situation. The ministry, however, were sensible that war, even with all this good fortune, was a losing game; and they therefore, much against the will of the nation, concluded a peace in February 1763.

By this treaty Great Britain gave up a certain portion of her conquests, in exchange for others which had been wrested from her; but she was nevertheless a gainer to an immense amount. She acquired from the French, Canada, that part of Louisiana east of the Mississippi, Cape Breton, Senegal, the islands of Grenada, Dominica, St Vincent's, and Tobago, with all the acquisitions which the French had made upon the Coromandel coast in the East Indies since 1749. From Spain she acquired Minorca, East and West Florida, with certain privileges of value. The continental states in alliance with Great Britain were also left as they had been. These advantages on the part of Great Britain had been purchased at the expense of an addition of sixty millions to the national debt, which now amounted in all to £133,959,270.

TRANSACTIONS IN IRELAND.

Since the pacification at Limerick, Ireland had been ruled exclusively by the Protestant party, who, under the influence of feelings arising from local and religious antipathies, had visited the Catholics with many severities. These measures naturally rendered the Catholics discontented subjects, and led to much turbulence. The common people of that persuasion, being denied all access to justice, took it into their own hands, and acquired those lawless habits for which they have since been remarkable. Treachery, cruelty, and all the lower passions, were called into vigorous exercise. The passing of a bill in 1719 by the English Parliament, declaring its power to legislate for Ireland, occasioned general dissatisfaction, and caused the rise of a patriotic party in the Parliament and people of Ireland, who professed to look to the advantage of the country, as distinguished from that of Great Britain. The discontent of the Tory party mingled with this spirit; and the celebrated Swift, in 1724, blew it into a flame by his severe pamphlets, called the 'Drapier's Letters,' which professedly decried a new coinage of halfpence, but were in reality aimed at the English ministry.

The discontents of the Catholics continued unabated, and the contentions of the patriotic party with the adherents of the English ministry were carried on with the utmost keenness in Parliament, when the rebellion in Scotland (1745) alarmed the government for the loyalty of Ireland. The Earl of Chesterfield, celebrated for his literary productions, was, in this exigency, sent for a short time as lord-lieutenant, and allowed to hold forth all possible encouragement to the Catholics and patriotic party. By discountenancing party distinctions, and giving the Catholics the full protection of the laws, he so effectually soothed and tranquillised the country, that while the neighbouring Protestant kingdoms exhibited an army seeking the restoration of a Catholic prince, Ireland, though full of Christians of that persuasion, and bound to the Jacobite cause by many endeared associations, remained perfectly faithful to the Hanover dynasty. When the danger was past, the earl was recalled, and the former system resumed. The struggles of the patriots with the English ministerial party were continued with unabated violence down to the death of George II., without producing any marked benefit to Ireland, although at one time the former party gained an ascendancy in the native Parliament.

CASE OF MR WILKES.

Ever since the accession of the Brunswick family in 1714, the government had been chiefly conducted by the Whig party, who formed a very powerful section of the aristocracy of England. Walpole, Pelham, Newcastle, and Pitt, had all ruled chiefly through the strength of this great body, who, till a period subsequent to the rebellion of 1745, seem to have had the support of the more influential portion of the people. After that period, when the Stuart claims ceased to have any effect in keeping the crown in check, a division appears to have grown up between the government and the people, which was manifested in various forms even before the demise of George II., but broke out in a very violent manner during the early years of his successor's reign. George III., who had imbibed high notions of the royal prerogative from the Earl of Bute, showed, from the beginning of his career, an anxious desire to extend the power of the crown, to shake off the influence of the great Whig families, and keep popular force of all kinds within strict limits.

A stranger, with no connexion in the country, a favourite, and, moreover, a man of unprepossessing manners, the Earl of Bute had neither the support of the aristocracy nor of the people. He was assailed in Parliament, and through the newspapers, with the most violent abuse—the unpopular peace furnishing a powerful topic against him. To this storm he at length yielded, by retiring (April 8, 1763).

Among the public writers who assailed the ministry, none was more virulent than Mr John Wilkes, member for Ailesbury, and editor of a paper entitled the 'North Briton.' Mr George Grenville, who succeeded Bute, commenced his career by prosecuting Wilkes for a libel, contained in the forty-fifth number of his paper, in which he had directly accused his majesty of falsehood. The king's messenger, being provided with a general warrant against the editor, printers, and publishers of the 'North Briton,' entered the house of Mr Wilkes, and apprehended him. After being examined before the secretaries of state, he was committed to the Tower, and his papers were seized and sealed up. A few days after, he was brought to Westminster Hall by *habeas corpus*, and released by Chief-Justice Pratt, in consideration of his being a member of Parliament. The Parliament ordered the seditious paper to be burnt by the hands of the common hangman—an operation that produced a riot, not in itself dangerous, but serving to discover the angry spirit of the populace. Mr Wilkes was soon after expelled from the House of Commons, and found it convenient to retire to the continent. One result of his case was favourable to the popular cause: a prosecution which he instituted against the secretary of state, on the plea that his seizure was illegal, terminated in a verdict of damages, and a declaration by Chief-Justice Pratt, that general warrants were inconsistent with the laws of England.

AMERICAN STAMP ACT.

The administration of Mr Grenville is memorable for the first attempt to tax the American colonies. An act passed under his influence (March 1765) for imposing stamps on those countries, appeared to the colonists as a step extremely dangerous to their liberties, considering that they had no share in the representation. They therefore combined almost universally to resist the introduction of the stamped paper by which the tax was to be raised. Resolutions were passed in the various assemblies of the States protesting against the assumed right of the British legislature to tax them. Partly by popular violence, and partly by the declarations issued by the local legislative assemblies, the object of the act was completely defeated.

The home government were then induced to agree to the repeal of the act, but with the reservation of a right to impose taxes on the colonies. Between the Stamp Act and its repeal, a change had taken place in the administration: the latter measure was the act of a Whig ministry under the Marquis of Rockingham, which, however, did not long continue in power, being supplanted by one in which Mr Pitt, now created Earl of Chatham, held a conspicuous place. The second Pitt administration was less popular than the first: the Earl of Chesterfield, reflecting on the title conferred on the minister, at the same time that he sunk in general esteem, called his rise a *fall up stairs*. All the ministries of this period laboured under a popular suspicion, probably not well founded, that they only obeyed the will of the sovereign, while the obnoxious Earl of Bute, as a secret adviser behind the throne, was the real, though irresponsible minister.

At the suggestion of Mr Charles Townsend, a member of the Earl of Chatham's cabinet, it was resolved, in 1767, to impose taxes on the Americans in a new shape; namely, upon British goods imported into the colonies, for which there was some show of precedent. An act for imposing duties on tea, glass, and colours, was accordingly passed with little opposition. Soon after this, Mr Townsend died, and the Earl of Chatham, who had been prevented by illness from taking any share in the business, resigned. The Americans met the new burdens with the same violent opposition as formerly.

THE WILKES TUMULTS.

Early in 1768, a new administration was formed under the Duke of Grafton, a pupil of Chatham, and soon after a new Parliament was called. At the general election, Mr Wilkes reappeared in England, though a sentence of outlawry still stood against him. He even ventured to become candidate for the county of Middlesex, where he was returned by a large majority. Having previously surrendered to the jurisdiction of the King's Bench, his outlawry was reversed; but by virtue of the verdicts which two courts had given against him, he was subjected to a fine and two years' imprisonment. On his arrest, Mr Wilkes quietly committed himself to the officers of justice, but was forcibly rescued by the populace; and in a riot subsequent to this violence, a young man, who had no participation in the tumult, was killed. During his imprisonment, Mr Wilkes was formally expelled the House of Commons, on the pretext that, by the vote of censure passed by the preceding Parliament, he was for ever disqualified from being a representative of the people. This decision incensed a great portion of the community, and the case became identified in their estimation with the liberties of the nation itself. Four times did the county of Middlesex return Mr Wilkes; but the rival candidate, Colonel Luttrell, with only a fourth of the votes, was accepted by the House.

These proceedings occasioned many keen debates in the House of Commons, where an opposition of much talent and ardour of purpose now took up every popular question. Tumults of a dangerous character were constantly taking place; the cry of 'Wilkes and Liberty' resounded everywhere, excepting only in Scotland, his scurrility against the Scotch having rendered him generally detested in that country. Even the municipal bodies and corporations, though usually not easily moved by popular topics, became zealous partisans of Mr Wilkes, and thought it their duty to remonstrate with the king on the arbitrary manner with which his government was conducted.

At this much-agitated time (1769), an unknown writer, styling himself Junius, commenced a series of letters in the 'Public Advertiser' newspaper, animadverting in the most virulent manner on both the men and measures of the government. These compositions were the more remarkable, as, from the force and elegance of their style, they were evidently the production of some person not only far above the usual character of newspaper writers, but fitted to rank with the first intellects of his day. The publisher of the newspaper was prosecuted for publishing them; but the author remained concealed, and his name, though still an object of curiosity, has never been discovered.

MINISTRY OF LORD NORTH—THE CITY OF LONDON'S REMONSTRANCE.

At the opening of Parliament in January 1770, it was expected that the conspicuous topic in the king's speech would be the Middlesex election. The surprise was general when it was found that the king did not make the least reference to the troubles respecting Mr Wilkes. The Opposition were enraged at this oversight, and moved, as an amendment to the address, that an inquiry ought to be made into the causes of the prevailing discontents; on which occasion, Charles James Fox, afterwards so celebrated as a political leader, made his first speech in Parliament. The amendment was negatived by 254 against 138, which showed that his majesty was quite secure of the support of the House of Commons.

At this time, the Duke of Grafton retired from the cabinet, and his place was supplied by Lord North, son of the Earl of Guilford. The new ministry was the tenth which had existed during as many years, but the first in which the king might be considered as completely free of the great Whig families, who, by their parliamentary influence, had possessed the chief power since the Revolution. This was the beginning of a series of Tory administrations, which, with few and short intervals, conducted the affairs of the nation down to the close of the reign of George IV.

The supposed injury which the cause of free election had sustained from the decision of the House of Commons, still for a time agitated the public mind. Forty-eight peers, including all the great Whig chiefs (Devonshire, Rockingham, Grosvenor, Fitzwilliam, Tankerville, King, &c.), besides the Earl of Chatham, made a public declaration that they should not cease their efforts till they had obtained full justice to the electors of Britain. The city of London, and some other corporations of note, presented remonstrances to the king on the same subject. The policy of the king and cabinet was to wear out the public fervour by dignified silence. No notice was therefore taken of these remonstrances; and under this species of policy the Wilkes agitations in time subsided.

THE AMERICAN WAR OF INDEPENDENCE.

Meanwhile the remonstrances of the American colonists had induced the ministry to give up all the new taxes, with the exception of that on tea, which it was determined to keep up, as an assertion of the right of Parliament to tax the colonies. In America, this remaining tax continued to excite as much discontent as the whole had formerly done, for it was the principle of a right to impose taxes which they found fault with, and not the amount of the tax itself. Their discontent with the mother country was found to affect trade considerably, and the British merchants were anxious to bring the dispute to a close. The government was then induced to grant such a drawback from the British duty on tea, as enabled the East India Company to offer the article in America at a lower rate than formerly, so that the American duty, which was only threepence a pound, did not affect the price. It was never doubted that this expedient would satisfy the colonists, and large shipments of tea were accordingly sent out from the British ports. The principle of the right to tax still lurked, however, under the concession, and the result only showed how little the sentiments of the Americans were understood at home.

The approach of the tea cargoes excited them in a manner totally unlooked for in Britain. At New York and Philadelphia, the cargoes were forbidden to land. In Charlestown, where they were permitted to land, they were put into stores, and prohibited from being sold. At Boston, a ship-load, which had been introduced into the harbour, was seized by a lawless mob, and tossed into the sea. This last act of violence was resented by the passing of a bill in Parliament for interdicting all commercial intercourse with the port of Boston, and another for taking away the legislative assembly of the state of Massachusetts. The former measure was easily obviated by local arrangements; and in reference to the latter, a Congress of representatives from the various States met at Philadelphia, in September 1774, when it was asserted that the exclusive power of legislation, in all cases of taxation and internal policy, resided in the provincial legislatures. The same assembly denounced other grievances, which have not here been particularly adverted to, especially an act of the British legislature for trying Americans, for treasonable practices, in England. The Congress also framed a covenant of non-intercourse, by which the whole utility of the colonies to the mother country, as objects of trading speculation, was at once laid prostrate. The colonists still avowed a desire to be reconciled, on the condition of a repeal of the obnoxious statutes. But the government had now resolved to attempt the reduction of the colonists by force of arms. Henceforth, every proposal from America was treated with a haughty silence on the part of the British monarch and his advisers.

The war opened in the summer of 1775, by skirmishes between the British troops and armed provincials, for the possession of certain magazines. At the beginning there seemed no hope of the contest being protracted beyond one campaign. The population of the colonies was at this time under three millions, and they were greatly inferior in discipline and appointments to the British troops. They possessed, however, an indomitable zeal in the cause they had agreed to defend, and fought with the advantage of being in the country of their friends. At Bunker's Hill, near Boston (June 17, 1775), they had the superiority in a well-contested fight with the British troops, of whom between two and three hundred were killed. At the end of one year, the British government was surprised to find that no progress had been made towards a reduction of the Americans, and sent out an offer of pardon to the colonists, on condition that they would lay down their arms. The proposal only met with ridicule.

On the 4th of July 1776, the American Congress took the decisive step of a declaration of their independence, embodying their sentiment in a document remarkable for its pathos and solemnity. During the next two campaigns, the slender forces of the new republic were hardly able anywhere to face the large and well-appointed armies of Great Britain. Much misery was endured by this hardy people in resisting the British arms. Notwithstanding every disadvantage and many defeats, America remained unsubdued.

The first serious alarm for the success of the contest in America, was communicated in December 1777, by intelligence of the surrender of an army under General Burgoyne at Saratoga. In the House of Commons, the ministers acknowledged this defeat with marks of deep dejection, but still professed to entertain sanguine hopes, from the vigour with which the large towns throughout Britain were now raising men at their own expense for the service of the government. Mr Fox, the leader of the Opposition, made a motion for the discontinuance of the war, which was lost by 165 to 259, a much narrower majority than any which the ministry had before reckoned in the Lower House.

In proportion to the dejection of the government, was the elation of the American Congress. Little more than two years before, the British sovereign and ministers had treated the petitions of the colonists with silent contempt; but such had been the current of events, that, in 1778, they found it necessary, in order to appease the popular discontent, to send out commissioners, almost for the purpose of begging a peace. As if to avenge themselves for the indignities of 1775, the Americans received these commissioners with the like haughtiness; and being convinced that they could secure their independence, would listen to no proposals in which the acknowledgment of that independence, and the withdrawal of the British troops, did not occupy the first place. The ministers, unwilling to submit to such terms, resolved to prosecute the war, holding forth

to the public, as the best defence of their conduct, the necessity of curbing the spirit of insubordination, both in the American colonies and at home, which they described as threatening the overturn of the most sacred of the national institutions.

The rise of Great Britain during the seventeenth and eighteenth centuries, in wealth and military and naval power, had been observed by many of the surrounding states with no small degree of jealousy. France, in particular, had not yet forgiven the triumphant peace which Britain had dictated in 1763. The Americans, therefore, by their emissary, the celebrated Benjamin Franklin, found no great difficulty in forming an alliance with France, in which the latter power acknowledged the independence of the colonists, and promised to send them large auxiliary forces. Viewing the distressed state to which Britain was reduced by the contest, and concluding that the time had arrived to strike a decisive blow for her humiliation, Spain soon after declared war against her; and in 1780, Holland was added to the number of her enemies. Russia then put herself at the head of what was called an Armed Neutrality, embracing Sweden and Denmark, the object of which was indirectly hostile to Britain. So tremendous was the force reared against Britain in 1779, even before all these powers had entered into hostilities, that it required about 300,000 armed men, 300 armed vessels, and twenty millions of money annually, merely to protect herself from her enemies. Even her wonted superiority at sea seemed to have deserted her; and for some time the people beheld the unwonted spectacle of a hostile fleet riding in the Channel, which there was no adequate means of opposing.

It was now obvious to the whole nation that this contest, upon whatever grounds it commenced, was a great national misfortune; and the Opposition in Parliament began to gain considerably in strength. After some votes, in which the ministerial majorities appeared to be gradually lessening, Mr Dunning, on the 6th of April 1780, carried, by a majority of eighteen, a motion, 'that the influence of the crown had increased, was increasing, and ought to be diminished.' This was looked upon as a severe censure of the government, considering that the House of Commons was not altogether a popular body, but included many who had seats there only through the influence of the crown, or by the favour of the nobility and gentry.

In the year 1778, an act had been passed, relieving the Roman Catholics in England from some of the severe penal statutes formerly enacted against them. The apprehension of a similar act for Scotland caused the people of that country to form an immense number of associations with a view to opposing it; and in the early part of 1779, the popular spirit broke out at Edinburgh and Glasgow in several alarming riots, during which one or two Catholic chapels, and some houses belonging to Catholics, were pillaged and burnt. An extensive Protestant Association was also formed in England, to endeavour to procure the repeal of the English act. This body was chiefly led by Lord George Gordon, a son of the late Duke of Gordon, and member of the House of Commons. In June 1780, an immense mob assembled in London to accompany Lord George to the House of Commons, where he was to present a petition against the act, signed by 120,000 persons. His motion for the repeal of the act being rejected by a vast majority, he came out to the lobby and harangued the crowd in violent terms, suggesting to them similar acts to those which had taken place in Scotland. The mob accordingly proceeded to demolish the chapels of the foreign ambassadors. Meeting with no effectual resistance, for the magistrates of the city were afraid to take decisive measures against them, they attacked Newgate, released the prisoners, and set the prison on fire. The new prison at Clerkenwell, the King's Bench, and Fleet Prisons, and the New Bridewell, were treated in like manner. At one time, thirty-six fires were seen throughout the city. The mob had uncontrolled possession of the streets for five days, pillaging, burning, and demolishing; until the king in council determined to authorise the military to put them down by force of arms. Tranquillity was then restored, but not before upwards of 400 persons were killed and wounded. Many of the ringleaders were convicted and executed. Lord George Gordon was tried for high treason, but acquitted on a plea of insanity, which his subsequent life showed to be well founded. Similar outrages were attempted in other cities, but prevented by the vigour of the magistrates. The chief sufferers from these riots were the party who aimed at political reforms. On the other hand, the king obtained increased respect, in consequence of the firmness he had shown in taking measures for the suppression of the riots.

The states of North and South Carolina, which contained a larger proportion of persons friendly to the British crown than any of the northern states, had submitted, in 1780, to a British army under General Clinton. Next year, the greater part of the troops which had been left in those states were conducted northward by Lord Cornwallis, in the hope of making further conquests; but the consequence was, that General Greene, after a series of conflicts, in which he greatly distressed various parties of the British troops, regained both Carolinas, while Lord Cornwallis took up a position at Yorktown in Virginia. At this time, General Washington, the American commander-in-chief, to whose extraordinary sagacity and purity of motives the colonists chiefly owed their independence, was threatening General Clinton's army at New York. Clinton tamely saw him retire to the southward, believing that he only meant to make a feint, in order to draw away the British from New York, when he in reality meant to attack Cornwallis. On the 29th of September (1781), Yorktown was invested by this and other corps of Americans and French; and in three weeks more, the British batteries being completely silenced, Lord Cornwallis surrendered with his whole army. With this event, though some posts were still kept up by British troops, hostilities might be said to have been concluded.

At the next opening of Parliament, many of those who had formerly supported the war, began to adopt opposite views; and early in 1782, a motion, made by General Conway, for the conclusion of the war, was carried by a majority of nineteen. The necessary consequence was, that, on the 20th of March, Lord North and his colleagues resigned office, after twelve years of continued misfortune, during which the prosperity of the country had been retarded, a hundred millions added to the national debt, and three millions of people separated from the parent state.

As usual in such cases, a new administration was formed out of the Opposition. The Marquis of Rockingham was made prime minister, and Mr Fox one of the secretaries of state. The new ministers lost no time in taking measures for the restoration of peace. Unfortunately for their credit with the nation, Sir George Rodney gained an important victory over the French fleet off the island of Dominica, April 12, 1782, after the ministers had despatched another officer to supersede him in the command. On this occasion, thirty-seven British vessels encountered thirty-four French; and chiefly by the dexterous manœuvre of a breach of the enemy's line, gained one of the most complete victories recorded in modern warfare. The triumph was eminently necessary, to recover in some measure the national honour, and enable the ministers to conclude the war upon tolerable terms. In November, provisional articles for a peace with the United States of America, now acknowledged as an independent power, were signed at Paris, and the treaty was concluded in the ensuing February. When the American ambassador was afterwards, for the first time, introduced at the British levée, the king received him kindly, and said with a manly frankness, that though he had been the last man in his dominions to desire that the independence of America should be acknowledged, he should also be the last to wish that that acknowledgment

should be withdrawn. War was soon after concluded with France, Spain, and Holland, but not without some considerable concessions of colonial territory on the part of Great Britain.

The conclusion of this war is memorable as a period of great suffering, arising from the exhaustion of the national resources, the depression of commerce, and the accident of a bad harvest. The principles of prosperity were, after all, found to be so firmly rooted in the country, that immediately after the first distresses had passed away, every department of the state resumed its wonted vigour, and during the ensuing ten years of peace, a great advance was made in national wealth.

On the unexpected death of the Marquis of Rockingham, in July 1782, the king chose as his successor the Earl of Shelburne, who, though nominally a Whig, was not sufficiently inclined to the general measures of that party to be agreeable to Mr Fox and other leading members of the cabinet. On their consequent resignation, the vacancies were filled up by the friends of Shelburne, among whom was Mr William Pitt, a younger son of the Earl of Chatham. This young statesman, to whom was assigned the office of chancellor of the exchequer, had already distinguished himself by the part he took in the popular proceedings for a reform of the House of Commons—an object which the Opposition and their supporters had for some years advocated with great zeal, but which soon after fell in a great measure out of public notice.

COALITION MINISTRY.

The present ministry was opposed by two parties of very different principles—namely, the adherents of the North administration, and the friends of those Whigs who had lately retired from the cabinet. These two parties, notwithstanding that they had been opposed to each other throughout all the late war, coalesced for factious or ambitious purposes; and being triumphant over the ministry, forced themselves upon the king's counsels. Then was formed (April 2, 1783) what was called the Coalition Ministry, in which Lord North and Mr Fox acted together as secretaries of state, though two years had hardly elapsed since the latter had breathed the most violent threats in Parliament against his present associate. A coalition, in which political principle was supposed to be abandoned for the sake of office, could not be agreeable to the nation, while it was evidently embarrassing to the sovereign. Mr Fox had prepared and carried through the Lower House his famous bill for the regulation of the East India Company, by which all authority was to devolve on seven directors chosen by the House of Commons; in other words, by which the immense patronage of this offshoot of the empire was to fall into the hands of the ministry. The India bill, as it was called, was generally supposed to aim at fixing the ministry in power beyond the control of both king and people, and it accordingly roused much indignation. His majesty therefore, fully confident of support from the people, used his personal influence, in no covert way, to induce the House of Lords to reject the bill, and (December 18) sent a messenger to demand the seals of office from his over-ambitious ministers, appointing Mr Pitt to be the prime minister and chancellor of the exchequer of a new cabinet, consisting chiefly of his majesty's friends.

The various departments of the state were now thrown into a relative position, which had never been known before, and has never recurred. The king and his ministers, backed by a decided majority of the public, were opposed by two powerful aristocratic factions in the House of Commons, who defeated every measure that was introduced, refused the usual supplies, and voted again and again resolutions against the continuance of the present men in office, which they denounced as unconstitutional. But in the course of a few weeks, the influence of the Opposition was sensibly reduced; the public sentiment and the power of the court began to take effect even on this intractable body; and when at length their majority had been worn down to one, which happened on a motion by Mr Fox, the king dissolved the Parliament—a measure which, whatever it might promise to him, he did not previously think justifiable. So far were the votes of the coalition from being based on popular support, that in the new election, no fewer than one hundred and sixty members lost their seats. The new House of Commons was so favourable towards the king and ministry, as to enable the public service to go on without further interruption.

LEGISLATIVE MEASURES IN IRELAND.

From the end of the reign of George I., a patriotic party in Ireland, composed of a mixture of Catholics and Protestants, had been exerting itself to reduce the influence of the English ministry in their country. The resistance of the American colonists gave a powerful stimulus to this body; and on some alarm of an invasion of the French, they found a pretext for taking up arms, apparently for the protection of the country, but in reality to render themselves formidable to England. Encouraged by Parliament, and headed by the principal men in the country, the Volunteer Corps, as they were called, held meetings and passed resolutions, in which they openly avowed their determination, at the hazard of life and fortune, to achieve the independence of the native legislature, and a complete participation in the commercial rights of the British. The government, being then too feeble to resist, bowed to their demands. Poyning's law, and others which had given the English Parliament a right to interfere with Ireland, were repealed; and acts were passed for the right of *habeas corpus* and the independence of the judges. In November 1783, the volunteers held a grand convention in Dublin, and proposed to urge the question of parliamentary reform; but the government now began to regain strength, and in a short time, by skilful measures, it prevailed upon the corps to dissolve.

MINISTRY OF MR PITT—FROM 1784 TO THE COMMENCEMENT OF THE FRENCH REVOLUTION.

Though the favourite minister of a sovereign decidedly opposed to all popular innovations, Mr Pitt continued to profess his former zeal for a reform in the House of Commons; but, as might be expected, was unable to bring the power of the government to bear upon the subject. In April 1785, he asked leave of the House to bring in a bill for this object; but it was refused by a large majority. The desire of parliamentary reform nevertheless continued to animate a large portion of the community. In 1784, a regular society had been instituted in Scotland, for the purpose of obtaining such a measure; and in the succeeding year, forty-nine out of the sixty-six boroughs had declared in favour of it. There were also numerous associations of a similar character throughout England.

In 1786, Mr Pitt established his celebrated but fallacious scheme for redeeming the national debt, by what was called a Sinking Fund. The revenue was at this time above fifteen millions, being about one million more than was required for the public service. This excess he proposed to lay aside annually, to lie at compound interest; by which means he calculated that each million would be quadrupled at the end of twenty-eight years, and thus go a great way towards the object he had in view. To this scheme Mr Fox added the infinitely more absurd amendment, that, when the government required to borrow more money, one million of every six so obtained should be laid aside for the same purpose. The scheme was so well received as to increase the popularity of the minister, and it was not till 1813 that its fallacy was proved.

In the same year commenced the parliamentary proceedings against Mr Warren Hastings, for alleged cruelty and robbery exercised upon the natives of India during his governorship of that dependency of Great Britain. These proceedings were urged by Mr Burke and other members of the Whig party, and excited so much public indignation against Mr Hastings, that the

ministry was obliged, though unwillingly, to lend their countenance to his trial, which took place before Parliament in the most solemn manner, and occupied in the aggregate one hundred and forty-nine days, extending over a space of several years. The proceedings resulted in the acquittal of Mr Hastings.

The king and queen had in the meantime become the parents of a numerous family of sons and daughters. The eldest son, George, Prince of Wales, had now for several years been of age, and exempted from the control of his father. He had no sooner been set up in an establishment of his own, than he plunged into a career of prodigality, forming the most striking contrast with the chastened simplicity and decorum of the paternal abode. He also attached himself to the party of the Opposition, though rather apparently from a principle of contradiction to his father, than a sincere approbation of their political objects. The result was the complete alienation of the Prince of Wales from the affections of his majesty.

In November 1788, an aberration of intellect, resulting from an illness of some duration, was observed in the king, and it became necessary to provide some species of substitute for the exercise of the royal functions. To have invested the Prince of Wales with the regency, appeared the most obvious course; but this would have thrown out the ministry, as it was to be supposed that his royal highness would call the chiefs of his own party to his councils. Mr Fox contended that the hereditary nature of the monarchy pointed out an unconditional right in the prince to assume the supreme power under such circumstances; but Mr Pitt asserted the right of Parliament to give or withhold such an office, and proposed to assign certain limits to the authority of the intended regent, which would have placed the existing ministry beyond his reach. The Irish Parliament voted the unconditional regency to the prince; but that of Great Britain was about to adopt the modified plan proposed by Mr Pitt, when, March 1789, the king suddenly recovered, and put an end to the difficulty. The debates on the regency question exhibit in a very striking light how statesmen will sometimes abandon their most favourite dogmas and strongest principles on the call of their own immediate interests.

MISCELLANEOUS CIRCUMSTANCES FROM 1760 TO 1790.

At the beginning of the reign of George III., both the commerce and the manufactures of the country might be considered as in a highly flourishing condition. Scotland was not now, as formerly, exempt from the general prosperity. In that country, since the year 1746, great improvements of various kinds had taken place: the linen manufacture had been much advanced; a trade with the colonies had sprung up; agriculture was undergoing great changes for the better; the Highlands were now peaceful, and throughout the whole country were seen conspicuous symptoms of increasing wealth and comfort, and their natural consequence, refinement of manners.

During the first ten years of the reign of George III., some discoveries and inventions were made, by which the prosperity of the whole empire received a new impulse. By the improvements effected in the steam-engine by Mr James Watt, a superior mechanic power was obtained for the driving of machinery and other purposes. Mr James Hargreaves of Blackburn invented the *spinning-jenny*, a contrivance for abridging the use of hand-labour in the cotton manufacture. Upon this an improvement was afterwards made by Mr Richard Arkwright, who invented what was called the *spinning-frame*, by which a vast number of threads of the utmost fineness were spun with very little aid from hand-labour. A third invention, called the *mule-jenny*, by Mr Crompton of Bolton, came into use some years later; and finally, the *power-loom* was invented, by Dr Cartwright, for superseding hand-labour in weaving. By these means, the cotton manufacture was brought to a pitch of prosperity in Britain, such as no particular branch of manufacture had ever experienced before in any country. The immense wealth produced by it is allowed to have been what chiefly enabled the nation to sustain the great contest in which it was afterwards involved with France. Considering these results, the original condition of the principal persons concerned in improving the manufacture is somewhat remarkable. Mr Watt, who gave it a mechanic force in the steam-engine, was an artisan in his early days; Mr Hargreaves was a carpenter; and Mr Arkwright a dresser of hair. The last, who was knighted by George III., left at his death nearly a million sterling, realised by the profits of his invention.

The early part of the reign of George III. was distinguished by the discoveries of Captain Cook in the Pacific Ocean, by the formation of many canals for internal navigation, and by the foundation of the Royal Academy for the Promotion of the Fine Arts. This period derives lustre from the admirable paintings of Barry, Blake, Hoppner, and Reynolds. Astronomy was cultivated by Dr William Herschel, who in 1781 discovered the planet Uranus. Chemistry was improved by Dr Joseph Black and Mr Cavendish. The science of medicine was advanced by Dr Cullen of Edinburgh; and natural history by Sir Joseph Banks. In literature, the chief place is due to Dr Samuel Johnson, who had flourished also in the preceding reign. Oliver Goldsmith, Mark Akenside, and William Cowper, were the most eminent poets. History was written in a masterly manner by Dr William Robertson and David Hume; Henry Home, David Hume, and Adam Smith, figure as philosophical writers; Sir William Blackstone wrote on English law; and amongst divines, the most eminent were Bishops Warburton, Jortin, and Hurd.

FRENCH REVOLUTION, AND CONSEQUENT WAR WITH FRANCE.

The country had for several years experienced the utmost prosperity and peace, when it was roused by a series of events which took place in France. The proceedings of the French nation for redressing the political grievances under which they had long laboured, commenced in 1789, and were at first very generally applauded in Britain, as likely to raise that nation to a rational degree of freedom. Ere long, the violence shown at the destruction of the Bastille, the abolition of hereditary privileges, the open disrespect for religion, and other symptoms of an extravagant spirit, manifested by the French, produced a considerable change in the sentiments of the British people. The proceedings of the French were still justified by the principal leaders of Opposition in Parliament, and by a numerous class of the community; but they inspired the government, and the propertied and privileged classes generally, with great alarm and distrust.

When at length the coalition of Austria and Prussia with the fugitive nobleses had excited the spirit of the French people to a species of frenzy, and led to the establishment of a Republic, and the death of the king, the British government and its supporters were effectually roused to a sense of the danger which hung over all ancient institutions, and a pretext was found (January 1793) for declaring war against France. A comparatively small body of the people were opposed to this step, which was also loudly deprecated in Parliament by Messrs Fox and Sheridan; but all these remonstrances were drowned in the general voice of the nation. At such a crisis, to speak of political reforms in England seemed the height of imprudence, as tending to encourage the French. All, therefore, who continued to make open demonstrations for that cause, were now branded as enemies to religion and civil order. In Scotland, Mr Thomas Muir, a barrister, and Mr Palmer, a Unitarian clergyman, were tried for sedition, and sentenced to various terms of banishment. Citizens named Skirving, Gerald, and Margarot, were treated in like manner by the Scottish criminal judges, for offences which could only be said to derive the character ascribed to them from the temporary and accidental circumstances of the nation. An attempt to

inflict similar punishments upon the English reformers, was defeated by the acquittal of a shoemaker named Hardy; but the party was nevertheless subjected, with the apparent concurrence of a large and influential portion of the people, to many minor severities.

After alliances had been formed with the other powers hostile to France, the British ministers despatched an army to the Netherlands, under the command of the king's second son, the Duke of York, to co-operate in reducing the fortresses in possession of the French, while the town of Toulon, being inclined to remain under the authority of the royal family, put itself into the hands of a British naval commander. At first, the French seemed to fail somewhat in their defences; but on a more ardently republican party acceding to power under the direction of the famous Robespierre, the national energies were much increased, and the Duke of Brunswick experienced a series of disgraceful reverses. The Prussian government, having adopted new views of the condition of France, now began to withdraw its troops, on the pretext of being unable to pay them; and though Britain gave nearly a million and a quarter sterling to induce this power to remain nine months longer upon the field, its co-operation was of no further service, and was soon altogether lost. On the 1st of June 1794, the French Brest fleet sustained a severe defeat from Lord Howe, with the loss of six ships; but the republican troops not only drove the combined armies out of the Netherlands, but taking advantage of an unusually hard frost, invaded Holland by the ice which covered the Rhine, and reduced that country to a Republic under their own control. The successes of the British were limited to the above naval victory, the temporary possession of Corsica and Toulon, the capture of several of the French colonies in the West Indies, and the spoliation of a great quantity of the commercial shipping of France; against which were to be reckoned the expulsion of an army from the Netherlands, the loss of 10,000 men and 60,000 stand of arms, in an unsuccessful descent upon the west coast of France, some considerable losses in mercantile shipping, and an increase of annual expenditure from about fourteen to nearly forty millions.

In the course of the year 1795, the lower portions of the community began to appear violently discontented with the progress of the war, and to renew their demands for reform in the state. As the king was passing (October 29) to open the session of Parliament, a stone was thrown into his coach, and the interference of the horse guards was required to protect his person from an infuriated mob. The ministers consequently obtained acts for more effectually repressing sedition, and for the dispersion of political meetings. They were at the same time compelled to make a show of yielding to the popular clamour for peace; and commenced a negotiation with the French Directory, which was broken off by the refusal of France to restore Belgium to Austria. In the ensuing year, so far from any advance being made towards the subjugation of France, the northern states of Italy were overrun by its armies, and formed into what was called the Cisalpine Republic. The celebrated Napoleon Bonaparte made his first conspicuous appearance as the leader of this expedition, which terminated in Austria submitting to a humiliating peace. At the close of 1796, a French fleet sailed for Ireland, with the design of revolutionising that country, and detaching it from Britain; but its object was defeated by stress of weather. At this crisis, a new attempt was made to negotiate with the French Republic; but as the events of the year had been decidedly favourable to France, a renewed demand of the British for the surrender of Belgium was looked upon as a proof that they were not sincere in their proposals, and their agent was insultingly ordered to leave the French territory. To add to the distresses of Britain, while Austria was withdrawn from the number of her allies, Spain, by a declaration of war in 1797, increased in no inconsiderable degree the immense force with which she had to contend.

THREATENED INVASION—SUBSEQUENT EVENTS.

For some time an invasion of Britain had been threatened by France; and, sacred as the land had been for centuries from the touch of a foreign enemy, the successes of the republicans had hitherto so greatly exceeded all previous calculation, that the execution of their design did not appear improbable. Just as the interference of the neighbouring powers had, in 1792, roused the energies of the French, so did this proposed invasion stimulate the spirit of the British people. The clamours of reformers, and of those who were friendly to France, were now lost in an almost universal zeal for the defence of the country; and not only were volunteer corps everywhere formed, but the desire of prosecuting the war became nearly the ruling sentiment of the nation. The ministers, perceiving the advantage which was to be derived from the tendency of the national spirit, appeared seriously to dread an invasion, and thus produced an unexpected and very distressing result. The credit of the Bank of England was shaken; a run was made upon it for gold in exchange for its notes, which it could not meet. On the 25th of February 1797, therefore, the Bank was obliged, with the sanction of the privy-council, to suspend cash payments—that is, to refuse giving coin on demand for the paper money which had been issued. This step led to a great depreciation in the value of Bank of England notes; and was followed by a very serious derangement of the currency for a number of years.

In April, a new alarm arose from the proceedings of the seamen on board the Channel fleet, who mutinied for an advance of pay, and the redress of some alleged grievances. A convention of delegates from the various ships met in Lord Howe's cabin, and drew up petitions to the House of Commons and the Board of Admiralty. Upon these being yielded to, order was restored; but the seamen on board the fleet at the Nore soon after broke out in a much more alarming revolt; and on the refusal of their demands, moored their vessels across the Thames, threatening to cut off all communication between London and the open sea. The reduction of this mutiny appeared at one time as if it could only be effected by much bloodshed; but by the firmness of the government, and some skilful dealings with the seamen, a loyal party was formed, by whom the more turbulent men were secured, and the vessels restored to their respective officers. The ringleaders, the chief of whom was a young man named Richard Parker, were tried and executed.

The same year was remarkable for several victories gained by the British fleets. A Spanish fleet of twenty-seven ships was attacked by fifteen vessels under Admiral Jervis (February 14), off Cape St Vincent, and completely beaten, with the loss of four large vessels. A fleet under Admiral Harvey, with a military force under Sir Ralph Abercromby, captured the island of Trinidad, a Spanish colony. In October, a Dutch fleet, under Admiral De Winter, was attacked off the village of Camperdown, upon their own coast, by Admiral Duncan, who, after a desperate battle, captured nine of the enemy's vessels. These naval successes compensated in some measure for the many land victories of the French, and served to sustain the spirit of the British nation under this unfortunate contest.

In 1798, the French overran and added to their dominions the ancient republic of Switzerland, which gave them a frontier contiguous to Austria, and enabled them eventually to act with increased readiness and force upon that country. In this year, the directors of the French Republic, beginning to be afraid of the ambition of their general, Bonaparte, sent him at the head of an expedition to reduce and colonise Egypt, intending from that country to act against the British empire in the East Indies. The expedition was successful in its first object; but the fleet which had conveyed it was attacked in Aboukir Bay, by Admiral Nelson (August 1), and almost totally destroyed or captured. While so much of the strength of the French army was

thus secluded in a distant country, the eastern powers of Europe thought they might safely recommence war with the republic. Austria, Naples, and Russia, formed a confederacy for this purpose; and Britain, to supply the necessary funds, submitted to the grievance of an income tax, amounting in general to ten per cent., in addition to all her previous burdens.

The new confederacy was so successful in 1799, as to redeem the greater part of Italy. A Russian army, under the famous Suwaroff, acted a prominent part in the campaign; but, in the end, attempting to expel the French from Switzerland, this large force was nearly cut to pieces in one of the defiles of that mountainous country. In August of the same year, Great Britain made a corresponding attempt to expel the French from Holland. Thirty-five thousand men, under the Duke of York, formed the military part of the expedition. The fleet was successful at the first in taking the Dutch ships; but the army, having landed under stress of weather at an unfavourable place for their operations, was obliged, after an abortive series of skirmishes, to make an agreement with the French, purchasing permission to go back to their country by the surrender of 8000 prisoners from England.

The reverses which France experienced in 1799, were generally attributed to the weakness of the Directory—a council of five, to which the executive had been intrusted. Bonaparte suddenly returned from his army in Egypt, and, by a skilful management of his popularity, overturned the Directory, and caused himself to be appointed the sole depositary of the executive power of the state, under the denomination of First Consul. He immediately wrote a letter to King George, making overtures of peace, but was answered, by the British secretary, that no dependence could be placed by Great Britain on any treaty with France, unless her government were again consolidated under the Bourbons. Bonaparte, having much reason to wish for peace, made a reply to this note, vindicating France from the charge brought against her, of having commenced a system of aggression inconsistent with the interests of other states, and asserting her right to choose her own government—a point, he said, that could not decently be contested by the minister of a crown which was held by no other tenure. But the British government was at this time too much elated by the expulsion of the French army from Italy, and the late changes in the executive, which, in their estimation, betokened weakness, to be immediately anxious for peace.

The events of 1800 were of a very different nature from what had been calculated upon in England. Sir Sidney Smith, who commanded the British forces in Syria, had made a treaty with the French army after it had been left by Bonaparte, whereby it was agreed that the French should abandon Egypt, and retire unmolested to their own country. The British government, in its present temper, refused to ratify this arrangement; and the consequence was a continuance of hostilities. The French overthrew a large Turkish army at Grand Cairo, and made themselves more effectually than ever the masters of the country, so that Britain was obliged to send an army next year, under Sir Ralph Abercromby, to accomplish, at an immense expense, and a great waste of human life, what the French had formerly agreed to do. In Europe, the presence of Bonaparte produced equally disastrous results. By one of his most dexterous movements, he eluded the Austrians, led an army over the Alps by the Great St Bernard into the Milanese, and having gained a decisive victory at Marengo (June 14), at once restored the greater part of Italy to French domination. Contemporaneously with Napoleon's movements, Moreau led another army directly into Germany, overthrew the Austrians in several battles, and advanced to within seventeen leagues of their capital, Vienna. These reverses obliged Austria next year (1801) to sue for and conclude a peace, by which France became mistress of all continental Europe west of the Rhine and south of the Adige.

REBELLION IN IRELAND—UNION WITH GREAT BRITAIN.

Although the government had been able, in 1793, to procure a dissolution of the volunteer corps, the bulk of the Irish people continued to express the most anxious desire for such a reform in their Parliament as might render it a more just representation of the popular voice. Unable to yield to them on this point, Mr Pitt endeavoured to appease them by extending their commercial privileges; but his wishes were frustrated, chiefly by the jealousy of the British merchants. A strong feeling of discontent, not only with the government, but with the British connection, was thus engendered in Ireland.

The commencement of the revolutionary proceedings in France excited the wildest hopes of the Irish. Towards the close of the year 1791, they formed an association, under the title of the United Irishmen, comprehending persons of all religions, and designed to obtain 'a complete reform of the legislature, founded on the principles of civil, political, and religious liberty.' The government from the first suspected this association of meditating an overturn of the state, and took strong measures for keeping it in check. Acts were passed for putting down its meetings, and the secretary, Mr Hamilton Rowan, was tried, and sentenced to a fine and two years' imprisonment for what was termed a seditious libel. At the same time, some concessions to the popular spirit were deemed indispensable, and the Irish Parliament accordingly passed acts enabling Catholics to intermarry with Protestants, to practise at the bar, and to educate their own children.

On discovering that a treasonable correspondence had been carried on with France by some leading persons in the society of United Irishmen, the government was so much alarmed as to send (1794) a Whig lord-lieutenant (Earl Fitzwilliam) to grant further concessions; but ere anything had been done, the ministers were persuaded by the Protestant party to return to their former policy. The patriotic party now despaired of effecting any improvement by peaceable means, and an extensive conspiracy was entered into for delivering up Ireland to the French republic. The scheme was managed by a directory of five persons, and though half a million of men were concerned in it, the most strict secrecy was preserved. In December 1796, a portion of the fleet which had been fitted out by the French to co-operate with the Irish patriots, landed at Bantry Bay; but measures for a rising of the people not being yet ripe, it was obliged to return. Next year, the losses at Camperdown crippled the naval resources of France, and prevented a renewal of the expedition. Losing all hope of French assistance, the conspirators resolved to act without it; but their designs were betrayed by one Reynolds; and three other members of the directory, Emmett, Macnevin, and Bond, were seized. Notwithstanding the precautionary measures which the government was thus enabled to take, the Union persisted in the design of rising on a fixed day. Lord Edward Fitzgerald, another of its leaders, was then arrested, and being wounded in a scuffle with his captors, soon after died in prison. On the 21st of May 1798, Lord Castlereagh, secretary to the lord-lieutenant, disclosed the whole plan of insurrection, which had been fixed to commence on the 23d.

Though thus thwarted in their designs, and deprived of their best leaders, the conspirators appeared in arms in various parts of the country. Parties attacked Naas and Carlow, but were repulsed with loss. A large party, under a priest named Murphy, appeared in the county of Wexford, and took the city of that name. Slight insurrections about the same time broke out in the northern counties of Antrim and Down, but were easily suppressed. In Wexford alone did the insurgents appear in formidable strength. Under a priest named Roche, a large party of them met and defeated a portion of the government troops; but on a second occasion, though they fought with resolution for four hours, they were compelled to retreat. Another defeat at New

Ross exasperated them greatly, and some monstrous cruelties were consequently practised upon their prisoners. On the 20th of June, their whole force was collected upon Vinegar Hill, near Enniscorthy, where an army of 13,000 men, with a proportionate train of artillery, was brought against them by General Lake. They were completely overthrown and dispersed. From this time the rebellion languished, and in July it had so far ceased to be formidable, that an act of amnesty was passed in favour of all who had been engaged in it, except the leaders.

On the 22d of August, when the rebellion had been completely extinguished, 900 French, under General Humbert, were landed at Killala, in the opposite extremity of the country from that in which the insurgents had shown the greatest strength. Though too late to be of any decisive effect, they gave some trouble to the government. A much larger body of British troops, under General Lake, met them at Castlebar, but retreated in a panic. They then advanced to the centre of the country, while the lord-lieutenant confessed the formidable reputation which their countrymen had acquired, by concentrating an immensely disproportioned force against them. On the 8th of September, they were met at Carrick-on-Shannon by this large army, to which they yielded themselves prisoners of war.

During the ensuing two years, the British ministers exerted themselves to bring about an incorporating union of Ireland with Great Britain; a measure to which the Irish were almost universally opposed, but which, by the use of bribes and government patronage liberally employed amongst the members of the Irish legislature, was at length effected. From the 1st of January 1801, the kingdom of Ireland formed an essential part of the empire, on which was now conferred the name of the United Kingdom of Great Britain and Ireland. The act of Union secured to the Irish most of the commercial privileges which they had so long sought. Upon a comparison of the aggregate exports and imports of the two countries, Ireland was to raise two parts of revenue for every fifteen raised by Great Britain, during the first twenty years of the Union, after which new regulations were to be made by Parliament. One hundred commoners were to be sent by Ireland to the British (now called the Imperial) Parliament; namely, two for each county, two for each of the cities of Dublin and Cork, one for the university, and one for each of the thirty-one most considerable towns. Four lords spiritual, by rotation of sessions, and twenty-eight lords temporal, elected for life by the Peers of Ireland, were to sit in the House of Lords.

The Union, though, upon the whole, effected in a spirit of fairness towards Ireland, increased the discontent of the people, which broke out in 1803 in a new insurrection. Under Robert Emmett and Thomas Russell, a conspiracy was formed for seizing the seat of the vice-government, and for this purpose a great multitude of peasantry from the county of Kildare assembled (July 23) in Dublin. Disappointed in their attempt upon the castle, they could only raise a tumult in the streets, in the course of which Lord Kilwarden, a judge, and his nephew, Mr Wolfe, were dragged from a carriage and killed. The mob was dispersed by soldiery, and Emmett and Russell, being seized, were tried and executed.

CHANGE OF MINISTRY, AND PEACE OF AMIENS, 1801.

At the commencement of 1801, Britain had not only to lament this unexpected turn of fortune, but to reckon among her enemies the whole of the northern states of Europe, which had found it necessary to place themselves on a friendly footing with Bonaparte, and though they did not declare war against Britain, yet acted in such a manner as to render hostilities unavoidable. Nelson sailed in March with a large fleet for Copenhagen, and proved so successful against the Danish fleet, as to reduce that country to a state of neutrality. The death of the Russian Emperor Paul, which took place at the same time, and the accession of Alexander, who was friendly to Britain, completely broke up the northern confederacy. Yet the great achievements of France on the continent, joined to the distresses of a famine which at this time bore hard on the British people, produced a desire for that peace which, a year before, might have been gained upon better terms. With a view, apparently, to save the honour of Mr Pitt and his friends, a new ministry was appointed under Mr Addington, by whom a peace was at length, in the end of the year (1801), concluded with France, which was left in the state of aggrandisement which has just been described.

The war of the French Revolution placed Great Britain in possession of a considerable number of islands and colonies in the East and West Indies and elsewhere; and while only two war ships had been lost on her part, she had taken or destroyed 80 sail of the line, 181 frigates, and 224 smaller ships, belonging to the enemy, together with 743 privateers, 15 Dutch, and 76 Spanish ships. The triumphs of the British fleets were indeed numerous and splendid, and had the effect of keeping the national commerce almost inviolate during the whole of the war, while that of France was nearly destroyed. There was, however, hardly the most trifling instance of success by land; and the expenses of the contest had been enormous. Previously to 1793, the supplies usually voted by the House of Commons were £14,000,000; but those for 1801 were £42,197,000—a sum about double the amount of the whole land-rent of the country.

WAR RENEWED WITH FRANCE, 1803.—SUBSEQUENT EVENTS.

It was only one of the results of the war against French independence, that France was led by the course of events to place herself under the control of her chief military genius, Napoleon Bonaparte; a man singularly qualified for concentrating and directing the energies of a country in the existing condition of France, but animated more by personal ambition than by any extended views of the good of his species. It was soon manifest that Bonaparte did not relish peace. By taking undue advantage of several points left loose in the treaty, he provoked Great Britain to retaliate by retaining possession of Malta; and the war was accordingly recommenced in May 1803. Britain immediately employed her superior naval force to seize the French West India colonies; while France took possession of Hanover, and excluded British commerce from Hamburg. Bonaparte collected an immense flotilla at Boulogne, for the avowed purpose of invading England; but so vigorous were the preparations made by the whole British population, and so formidable the fleet under Lord Nelson, that he never found it possible to put his design in execution. In the year 1804, he was elevated to the dignity of Emperor of the French; and France once more exhibited the formalities of a court, though not of the kind which the European sovereigns were anxious to see established. In April of the same year, the Addington administration was exchanged for one constructed by Mr Pitt, and of which he formed the leader.

In 1805, under the fostering influence of Great Britain, a new coalition of European powers, consisting of Russia, Sweden, Austria, and Naples, was formed against Napoleon. He, on the other hand, had drawn Spain upon his side, and was making great exertions for contesting with Britain the empire of the sea. A fleet of thirty-three sail, partly French and partly Spanish, met a British fleet of twenty-seven, under Nelson, off Cape Trafalgar, October 25, 1805, and was completely beaten, though at the expense of the life of the British commander. Britain thus fixed permanently her dominion over the seas and coasts of the civilised world. At this time, however, Napoleon was asserting with equal success his supremacy over continental Europe. By a sudden, rapid, and unexpected movement, he conducted an army into Germany, where the Austrians were already making aggressions upon neutral territory. On the 17th October, he took the fortress of Ulm, with its artillery, magazines, and gar-

rison of 30,000 men; a month after, he entered Vienna without resistance. He then pursued the royal family, and the allied armies of Russia and Austria, into Moravia; and on the 2d of December 1805, he gained the decisive and celebrated victory of Austerlitz, which put an end to the coalition, and rendered him the dictator of the continent.

This series of events caused much gloom in the British councils, and with several other painful circumstances, among which was the impeachment of his colleague Lord Melville, for malpractices in the Admiralty, proved a death-blow to Mr Pitt, who expired on the 23d of January 1806, completely worn out with state business, at the early age of forty-seven, half of which time he had spent in the public service. Mr Pitt is universally allowed the praise of high talent and patriotism. But his policy has been a subject of dispute between the two great political parties into which British society is divided. By the Tories it is firmly believed that his entering into the war against the French Republic was the means of saving the country from anarchy and ruin; by the Whigs, that this step only tended to postpone the settlement of the affairs of France, and loaded Britain with an enormous debt. Of the absence of all selfish views in the political conduct of Mr Pitt, there can be no doubt; for, so far from accumulating a fortune out of the public funds, he left some debts, which Parliament gratefully paid.

Mr Pitt's ministry was succeeded by one composed of Lord Grenville, Mr Fox, and their friends; it was comprehensively called Whig, although Lord Grenville was in every respect a Tory, except in his advocacy of the claims of the Catholics for emancipation. In the course of 1806, the new cabinet made an attempt to obtain a peace from France, which now threatened to bring the whole world to its feet. But the Grenville administration encountered serious difficulties from the king, who never could be induced to look with the least favour on the Catholic claims, or those who advocated them. Exhausted by his useless labours, Mr Fox died, September 13, 1806. Few names are more endeared to the British people than his, for, though the leader of the Whigs, he never excited any rancour in his opponents. He was remarkable for his frankness and simplicity. His abilities as a parliamentary orator and statesman were of the first order, and he was invariably the consistent and sincere friend of popular rights.

A new coalition, excluding Austria, but involving Prussia, had been subsidised by Britain, and was now preparing to act. With his usual decision, Napoleon led what he called his 'Grand Army' by forced marches into Prussia; gained, on the 14th of October, the battles of Jena and Auerstadt, which at once deprived that country of her army, her capital, and her fortresses; and then proclaimed the famous 'Berlin Decrees,' by which he declared Great Britain in a state of blockade, and shut the ports of Europe against her merchandise. The king of Prussia, Frederick William III., took refuge with his court in Russia, which now was the only continental power of any importance that remained unsubdued by France.

Towards that country Napoleon soon bent his steps, taking, as he went, assistance from Poland, which he promised to restore to independence. After a series of skirmishes and battles of lesser importance, he met the Russian army in great strength (June 14, 1807), at Friedland, and gave it a total overthrow. He might now have easily reduced the whole country, as he had done Austria and Prussia; but he contented himself with forming a treaty (called the treaty of Tilsit, from the place where it was entered into), by which Russia agreed to become an ally of France, and entered into his views for the embarrassment of Britain by the exclusion of her commerce from the continental ports. France had thus, in the course of a few years, disarmed the whole of Europe, excepting Great Britain, an amount of military triumph for which there was no precedent in ancient or modern history.

The Grenville administration was displaced in the spring of 1807, in consequence of the difference between its members and the king on the subject of the Catholic claims, which had long been urged by the Whig party, with little support from the people. The next ministry was headed by the Duke of Portland, and included Lords Hawkesbury and Castlereagh (afterwards Earl of Liverpool and Marquis of Londonderry), and Mr Canning, as secretaries; Mr Spencer Perceval being chancellor of the exchequer. After being accustomed to the services of such men as Pitt and Fox, the people regarded this cabinet as one possessing comparatively little ability. One of its first acts was the despatch of a naval armament to Copenhagen to seize and bring away the Danish shipping, which was expected to be immediately employed in subserviency to the designs of France, and for the injury of Britain. The end of the expedition was easily obtained; but it was the means of lowering the honour of Britain in the estimation of foreign powers.

FIRST PENINSULAR CAMPAIGN—SUBSEQUENT EVENTS.

The retaliation of France, for the interferences of other powers with its Revolution, even supposing such retaliation justifiable, was now more than completed. Further measures could only appear as dictated by a desire of aggrandisement. But France was now given up to the direction of a military genius, who had other ends to serve than the defence of the country against foreign aggression or interference. The amazing successes of Napoleon had inspired him with the idea of universal empire; and so great was the influence he had acquired over the French, and so high their military spirit, that the attainment of his object seemed by no means impossible. There was a difference, however, between the opposition which he met with before this period, and that which he subsequently encountered. In the earlier periods of the war, the military operations of the European powers were chiefly dictated by views concerning the interests of governments, and in which the people at large felt little sympathy. Henceforth a more patriotic spirit rose everywhere against Napoleon: he was looked upon in England and elsewhere as the common enemy of humanity and of freedom; and every exertion made for the humiliation of France was animated by a sentiment of desperation, in which the governors and governed alike participated.

The Spanish peninsula was the first part of the prostrated continent where the people could be said to have taken a decidedly hostile part against Napoleon. He had there gone so far as to dethrone the reigning family, and give the crown to his elder brother Joseph. A sense of wrong and insult, mingled with religious fanaticism, raised the Spanish people in revolt against the French troops; and though their conduct was everywhere barbarous in the extreme, it was hailed in Britain as capable of being turned to account. In terms of a treaty entered into with a provisional government in Spain, a small army was landed, August 8, 1808, in Portugal, which had been recently taken possession of by the French. Sir Arthur Wellesley, who afterwards became so famous as Duke of Wellington, was the leader of this force. In an engagement at Vimeira, on the 21st, he repulsed the French, under Junot, who soon after agreed, by what was called the Convention of Cintra, to evacuate the country. Sir Arthur being recalled, the British army was led into Spain under the command of Sir John Moore; but this officer found the reinforcements poured in by Napoleon too great to be withstood, and accordingly, in the end of December, he commenced a disastrous, though well-conducted retreat towards the port of Corunna, whither he was closely pursued by Marshal Soult. The British army suffered on this occasion the severest hardships and losses, but did not experience a check in battle, or lose a single standard. In a battle which took place at Corunna, January 16, 1809, for the purpose of protecting the embarkation of the troops, Sir John Moore was killed.

Much of the public attention was about this time

engrossed by circumstances in the private life of the eldest son of the king. The Prince of Wales had been tempted, in 1796, by the prospect of having his large debts paid by the nation, to marry the Princess Caroline of Brunswick, for whom he entertained no real affection. Almost ever since the marriage, he had shown the most marked disrespect for his consort, who consequently lived separate from him, and was herself considered by many as not altogether blameless in her conduct as a matron.

In 1809, Austria was induced once more to commence war with France. Upwards of half a million of men were brought into the field, under the command of the Archduke Charles. Bonaparte, leaving Spain comparatively open to attack, moved rapidly forward into Germany, and, by the victory of Eckmühl, opened up the way to Vienna, which surrendered to him. After gaining a slight advantage at Essling, the archduke came to a second decisive encounter at Wagram, where the strength of Austria was completely broken to pieces. The peace which succeeded was sealed by the marriage of Napoleon to Maria Louisa, daughter of the emperor of Austria, for which purpose he divorced his former wife Josephine.

In the autumn of 1809, the British government despatched an armament of 100,000 men, for the purpose of securing a station which should command the navigation of the Scheldt. The expedition was placed under the command of the Earl of Chatham, elder brother of Mr Pitt, a nobleman totally unacquainted with military affairs on such a scale. The army, having disembarked on the insalubrious island of Walcheren, was swept off in thousands by disease. The survivors returned in December without having done anything towards the object for which they set out. This tragical affair became the subject of inquiry in the House of Commons, which, by a majority of 272 against 232, vindicated the manner in which the expedition had been managed.

SUCCESSES OF WELLINGTON IN SPAIN.

A new expedition in Spain was attended with better success. Taking advantage of the absence of Napoleon in Austria, a considerable army was landed, April 23, 1809, under the command of Sir Arthur Wellesley, who immediately drove Soult out of Portugal, and then made a rapid move upon Madrid. King Joseph advanced with a considerable force under the command of Marshal Victor; and on the 28th of July, attacked the British and Spanish troops in a strong position at Talavera. The contest was obstinate and sanguinary; and though the French did not retreat, the advantage lay with the British. As this was almost the first success which Britain experienced by land in the course of the war, Sir Arthur Wellesley became the theme of universal praise, and he was elevated to a peerage, under the title of Viscount Wellington of Talavera. He was obliged immediately to fall back upon Portugal, where he occupied a strong position near Santarem.

Early in 1810, Napoleon reinforced the army in Spain, and gave orders to Massena to 'drive the British out of the Peninsula.' Wellington posted his troops on the heights of Busaco—eighty thousand in number, including Portuguese—and there, on the 27th of September, was attacked by an equal number of French. Both British and Portuguese behaved well: the French were repulsed with great loss, and for the first time in the war, conceived a respectful notion of the British troops. Wellington now retired to the lines of Torres Vedras, causing the whole country to be desolated as he went, for the purpose of embarrassing the French. When Massena observed the strength of the British position, he hesitated; and ultimately, in the spring of 1811, performed a disastrous and harassed retreat into the Spanish territory.

It now became an object of importance with Wellington to obtain possession of the Spanish fortresses which had been seised by the French. On the 22d of April, he reconnoitred Badajos, and soon after laid siege to Almeida. Massena, advancing to raise the siege, was met on fair terms at Fuentes d'Onoro, May 5, and repulsed. Almeida consequently fell into the hands of the British. General Beresford, at the head of another body of British forces, gained the bloody battle of Albuera over Soult, and thereby protected the siege of Badajos, which, however, was soon after abandoned. During the same season, General Graham, in command of a third body of troops, gained the battle of Barossa. At the end of a campaign, in which the French were upon the whole unsuccessful, Wellington retired once more into Portugal.

SIR F. BURDETT—THE REGENCY.

The exclusion of strangers from the House of Commons during the inquiries into the Walcheren expedition, had been made a subject of discussion in a debating club, the president of which was therefore committed to Newgate for a breach of privilege. Sir Francis Burdett, member for Westminster, made this proceeding the subject of some acrimonious remarks in a letter to his constituents, denying the right of the House of Commons to imprison without trial, and describing that body as 'a part of our fellow-subjects, collected together by means which it is not necessary for me to describe.' The letter was voted a libel on the House, and a warrant was issued by the speaker for committing Sir Francis to the Tower. Sir Francis, denying the legality of the warrant, resisted its execution by remaining in his own house, where he was protected from the officers by immense crowds of people. After suffering a kind of siege for two days, he was forcibly taken by a large train of soldiers, and lodged in the Tower. By these proceedings, the capital was convulsed for several days; and in the course of the tumults which took place, a number of lives were lost.

The intellect of the king, which had experienced several temporary aberrations, gave way at the close of the year 1810, and rendered the appointment of a regent unavoidable. Accordingly, in December, the Parliament imposed that duty upon the Prince of Wales, though under certain restrictions as to the appointment of officers, and other branches of the royal prerogative. The Tory party had not now the same reason to dread the accession of the prince which they had in 1789. His sentiments on the Catholic claims, originally favourable, had in 1804 experienced a decided change, which proved the means of alienating him from the Whigs, with whom Catholic emancipation was a leading principle. Though he did not at first show any disinclination to take his old friends into the ministry, he contrived, when the first year of restriction had elapsed, to let them remain in their wonted state of opposition, without seeming to have desired it.

EVENTS OF 1811, 1812, AND 1813.

The year 1811 was regarded as the period of greatest depression and distress which the British empire had known for several ages. At this time, with the exception of an uncertain footing gained in Spain, the influence of England was unknown on the continent. Bonaparte seemed as firmly seated on the throne of France as any of her former monarchs, while every other civilised European kingdom either owned a monarch of his express appointment, or was in some other way subservient to him. By the Berlin and Milan decrees, he had shut the ports of the continent against British goods, so that they could only be smuggled into the usual markets. By British orders in council, which, though intended to be retaliatory, only increased the evil, no vessel belonging to a neutral power—such, for instance, as the United States—was permitted to carry goods to those ports, unless they should previously land and pay a duty in Britain. Thus the nation at once suffered from the shortsighted despotism of the French emperor, and from its own narrow and imperfect views of commerce; for, by embarrassing America, it only deprived itself of one of its best and almost sole remaining customers.

The power of Bonaparte, though sudden in its rise,

might have been permanent if managed with discretion. It was used, however, in such a way as to produce a powerful reaction throughout Europe in favour of those ancient institutions, which, twenty years before, had been threatened with ruin. The exclusion of British goods—a measure which he had dictated in resentment against England—proved the source of great distress, oppression, and hardship throughout the continent, and was greatly instrumental in exciting a spirit of hostility against him. The very circumstance of a foreign power domineering over their native princes, raised a feeling in favour of those personages, which, being identified with the cause of national independence, acted as a very powerful stimulant. On the other hand, a sense of the grasping ambition of Napoleon—of his hostility to real freedom—of his unscrupulousness in throwing away the lives of his subjects for his own personal aggrandisement—had for some time been gaining ground in France itself.

In 1812, when the transactions in Spain had already somewhat impaired Napoleon's reputation, Alexander, Emperor of Russia, ventured upon a defiance of his decrees against British merchandise, and provoked him to a renewal of the war. With upwards of half a million of troops, appointed in the best manner, he set out for that remote country, determined to reduce it into perfect subjection. An unexpected accident defeated all his plans. The city of Moscow, after being possessed by the French troops in September, was destroyed by incendiaries, so that no shelter remained for them during the ensuing winter. Napoleon was obliged to retreat; but, overtaken by the direst inclemency of the season, his men perished by thousands in the snow. Of his splendid army, a mere skeleton regained central Europe. Returning almost alone to Paris, he contrived with great exertions to reinforce his army, though there was no replacing the veterans lost in Russia.

Early in 1813, he opened a campaign in northern Germany, where the emperor of Russia, now joined by the king of Prussia and various minor powers, appeared in the open field against him. After various successes on both sides, an armistice was agreed to on the 1st of June, and Bonaparte was offered peace on condition of restoring only that part of his dominions which he had acquired since 1805. Inspired with an overweening confidence in his resources and military genius, he refused these terms, and lost all. In August, when the armistice was at an end, his father-in-law, the emperor of Austria, joined the allies, whose forces now numbered 500,000 men, while an army of 300,000 was the largest which Napoleon could at present bring into the field. Henceforth he might be considered as overpowered by numbers. By steady, though cautious movements, the allies advanced to France, driving him reluctantly before them, and increasing their own force as the various states became emancipated by their presence. At the close of 1813, they rested upon the frontiers of France, while Lord Wellington, after two successful campaigns in Spain, had advanced in like manner to the Pyrenees.

HOME AFFAIRS.—WAR WITH AMERICA.

Some changes had in the meantime taken place in the British administration. On the 11th of May 1812, the premier, Mr Perceval, was shot in the lobby of the House of Commons, by a man named Bellingham, whom some private losses had rendered insane. Lords Liverpool and Castlereagh then became the ministerial leaders in the two Houses of Parliament, but were quickly voted down by a majority of four, upon a motion made by Mr Stuart Wortley, afterwards Lord Wharncliffe. The ministry was finally rendered satisfactory to Parliament by the admission of Earl Harrowby as president of the council, Mr Vansittart as chancellor of the exchequer, and Lord Sidmouth (formerly premier while Mr Addington) as secretary for the home department; Lord Liverpool continuing as premier, and Lord Castlereagh as foreign and war secretary.

Notwithstanding the successes which were at this period brightening the prospects of Britain, the regent and his ministers did not enjoy much popularity. The regent himself did not possess those domestic virtues which are esteemed by the British people, and he had excited much disapprobation by the steps which he took for fixing a criminal charge upon his consort. The general discontents were increased by the effects of the orders in council, for prohibiting the commerce of neutral states. Vast multitudes of working people were thrown idle by the stagnation of manufactures, and manifested their feelings in commotion and riot. The middle classes expressed their dissatisfaction by clamours for parliamentary reform.

At this unhappy crisis, provoked by the orders in council, as well as by a right assumed by British war-vessels to search for and impress English sailors on board the commercial shipping of the United States, that country (June 1812) declared war against Britain. Before the news had reached London, the orders had been revoked by the influence of Lord Liverpool; but the Americans, nevertheless, were too much incensed to retrace their steps. During the summer and autumn, several encounters took place between single American and British ships, in which the former were successful. It was not till June 1, 1813, when the Shannon and Chesapeake met on equal terms, that the British experienced any naval triumph in this war with a kindred people. On land, the Americans endeavoured to annoy the British by assaults upon Canada, but met with no decisive success. The British landed several expeditions on the coast of the States; and were successful at Washington, at Alexandria, and at one or two other points, but experienced a bloody and disastrous repulse at New Orleans. The war ended, December 1814, without settling any of the principles for which the Americans had taken up arms. But while thus simply useless to America, it was seriously calamitous to Britain. The commerce with the States, which amounted in 1807 to twelve millions, was interrupted and nearly ruined by the orders in council, and the hostilities which they occasioned: henceforth America endeavoured to render herself commercially independent of Britain, by the encouragement of native manufactures—a policy not immediately advantageous perhaps to herself, but decidedly injurious to Great Britain. The fatal effects of the Berlin and Milan decrees to Napoleon, and of the orders in council to the interests of Britain, show how extremely dangerous it is for any government to interfere violently with the large commercial systems upon which the immediate interests of their subjects depend.

PEACE OF 1814—SUBSEQUENT EVENTS.

At the close of 1813, it was evident that Bonaparte could hardly defend himself against the vast armaments collected on all hands against him. Early in 1814, having impressed almost every youth capable of bearing arms, he opposed the allies on the frontiers with a force much less numerous and worse disciplined. Even now he was offered peace, on condition that he should only retain France as it existed before the Revolution. But this proposition was too humiliating to his spirit to be accepted; and he entertained a hope that, at the worst, his father-in-law, the emperor of Austria, would not permit him to be dethroned. Two months were spent in almost incessant conflict with the advancing allies, who, on the 30th of March, entered Paris in triumph; and in the course of a few days, ratified a treaty with Napoleon, by which he agreed to resign the government of France, and live for the future as only sovereign of Elba, a small island in the Mediterranean.

In the measures for settling France, Great Britain concurred by her representative Lord Castlereagh, who attended the allies during the campaign of 1814; and peace was proclaimed in London on the 20th of June. France was deprived of all the acquisitions gained both under the Republic and the Empire, and restored to the rule of the ancient royal family in the person of Louis XVIII. The emperor of Russia and the king of

Prussia visited England in June, and were received with all the honours due to men who were considered as the liberators of Europe. Wellington, now created a duke, received a grant of £400,000 from the House of Commons, in addition to one of £100,000 previously voted; and had the honour to receive in person the thanks of the House for his services. Representatives from the European powers concerned in the war met at Vienna, October 2, in order to settle the disturbed limits of the various countries, and provide against the renewal of a period of war so disastrous. Throughout the whole arrangements, Great Britain acted with a disinterested magnanimity, which, after her great sufferings and expenses, could hardly have been looked for, but was highly worthy of the eminent name which she bore amidst European nations.

In March 1815, the proceedings of the Congress were interrupted by intelligence that Napoleon had landed in France and was advancing in triumph to the capital. He had been encouraged by various favourable circumstances to attempt the recovery of his throne; and so unpopular had the new government already become, that, though he landed with only a few men, he was everywhere received with affection, and on the 20th of March was installed in his capital, which had that morning been left by Louis XVIII. The latter sovereign had granted a charter to his people, by which he and his successors were bound to rule under certain restrictions, and with a legislature composed of two chambers, somewhat resembling the British Houses of Parliament. Bonaparte now came under similar engagements, and even submitted to take the votes of the nation for his restoration; on which occasion he had a million and a-half of affirmative, against less than half a million of negative voices, the voting being performed by ballot. His exertions to reorganise an army were successful to a degree which showed his extraordinary influence over the French nation. On the 1st of June he had 559,000 effective men under arms, of whom 217,000 were ready to take the field.

A Prussian army of more than 100,000 men, under Blucher, and one of about 80,000 British, Germans, and Belgians, under Wellington, were quickly rendezvoused in the Netherlands, while still larger armies of Austrians and Russians, making the whole force above 1,000,000, were rapidly approaching. These professed to make war, not on France, but against Bonaparte alone, whom they denounced as having, by his breach of the treaty, 'placed himself out of the pale of civil and social relations, and incurred the penalty of summary execution.' Napoleon, knowing that his enemies would accumulate faster in proportion than his own troops, crossed the frontier on the 14th of June, with 120,000 men, resolved to fight Blucher and Wellington separately, if possible. The rapidity of his movements prevented that concert between the Prussian and English generals which it was their interest to establish. On the 16th, he beat Blucher at Ligny, and compelled him to retire. He had at the same time intrusted to Marshal Ney the duty of cutting off all connection between the two hostile armies. His policy, though not fully acted up to by his marshals, was so far successful, that Blucher retired upon a point nearly a day's march from the forces of Wellington.

After some further fighting next day, Napoleon brought his whole forces to bear, on the 18th, against Wellington alone, who had drawn up his troops across the road to Brussels, near a place called Waterloo. The battle consisted of a constant succession of attacks by the French upon the British lines. These assaults were attended with great bloodshed, but nevertheless resisted with the utmost fortitude, till the evening, when Blucher came up on the left flank of the British, and turned the scale against the French, who had now to operate laterally, as well as in front. The failure of a final charge by Napoleon's reserve to produce any impression on the two armies, decided the day against him: his baffled and broken host retired before a furious charge of the Prussian cavalry, who cut them down unmercifully. On his return to Paris, Napoleon made an effort to restore the confidence of his chief counsellors, but in vain. After a fruitless abdication in favour of his son, he retired on board a small vessel at Rochfort, with the intention of proceeding to America; but being captured by a British ship of war, he was condemned by his triumphant enemies to perpetual confinement on the island of St Helena, in the Atlantic, where he died in 1821.

Louis XVIII. was now restored, and the arrangements of the Congress of Vienna were completed. The expenses of Great Britain during this last year of hostilities exceeded seventy millions; and the national debt, which in 1793 had been £230,000,000, now amounted to the vast sum of £860,000,000.

During the latter years of Napoleon, a reaction had taken place throughout Europe against the innovatory doctrines which, by producing the French Revolution, had been the cause, innocent or guilty, of so much ruinous warfare. Encouraged by this sentiment, the sovereigns of Austria, Prussia, and Russia, had no sooner settled the new government of France, than they entered, September 26, 1815, into a personal league or bond for assisting each other on all occasions when any commotion should take place among their respective subjects. This treaty was composed in somewhat obscure terms; and from its professing religion to be the sole proper guide 'in the counsels of princes, in consolidating human institutions, and remedying their imperfections,' it obtained the name of the Holy Alliance. It was published at the end of the year, and communicated to the Prince Regent of England, who approved of, but did not accede to it.

The reaction had also its effect in Great Britain, in fixing the power of the aristocracy, which, by composing the whole of the Upper House, and influencing the election of a major part of the Lower, might be said to constitute the government. The security of this predominating power was indicated by several acts in which their peculiar interests were consulted. In the preceding year, an act had been passed for prohibiting the importation of grain from the continent, when the price in this country should be less than eighty shillings per quarter. An attempt to continue the income and property taxes, which pressed with the greatest severity on the wealthy and landed classes, was also negatived.

THE PRINCESS CHARLOTTE—POPULAR TUMULTS.

In May 1816, the Princess Charlotte, only child of the Prince Regent, was married to Prince Leopold of Saxe-Coburg, a young officer who had gained her affections when attending the allied sovereigns at the British court. In November 1817, to the inexpressible grief of the whole nation, the young princess died, immediately after having given birth to a dead son.

In August 1816, a British armament under Lord Exmouth bombarded Algiers, and reduced that piratical state to certain desirable conditions respecting the treatment of Christian prisoners.

The year 1816, and the four following years, will always be memorable as an epoch of extraordinary distress, affecting almost every class of the community. The liberation of European commerce at the end of the war produced a proportionate diminution of that trade which England had previously enjoyed, through her exclusive possession of the seas. While all public burdens continued at their former nominal amount, the prices of every kind of produce, and of every kind of goods, had fallen far below the unnatural level to which a state of war and of paper money had raised them; and hence the expenses of the late contest, which had never been felt in the fictitious prosperity then prevalent, came to press with great severity upon the national resources, at a time when there was much less ability to bear the burden. To complete the misery of the country, the crops of 1816 fell far short of the usual quantity, and the price of bread was increased to an amount more than double that which has since been the average rate.

Tumultuary proceedings took place in various parts of the country; and a desire for a reform in the House of Commons, which was supposed to be the only means of reducing the public expenditure, began to take deep root among the lower orders, and produced tumultuary excesses in the metropolis. The government then adopted expedients for counteracting the force of the popular spirit. They endeavoured to make it appear that an extensive conspiracy had been formed for the overthrow of the government. Of the four rioters charged with high treason, a conviction was obtained only against one. Such unanimity, however, prevailed between the ministry and the Parliament, that, at the close of February (1817), an act was passed for the suspension of the Habeas Corpus Act. A considerable number of persons were imprisoned, and detained for some time at the will of the ministers.

A temporary revival of prosperity occurred in 1818, but was quickly followed by renewed distress. In the autumn of 1819, the misery of the working-classes had reached its greatest height, and still parliamentary reform was demanded as the only measure which could permanently improve their prospects. On the 12th of July, at a public meeting in the unrepresented town of Birmingham, an attorney was elected to proceed to Westminster, and openly claim to be received as a member of Parliament. On the 16th of August, a vast body of operatives assembled at Manchester, in an open space of ground called St Peter's Field, for a similar purpose, though professedly to petition for parliamentary reform. As they came in regular array, bearing banners with inscriptions, the magistrates professed to consider the meeting as dangerous to the public peace, and accordingly, ere the proceedings were far advanced, a body of troops, consisting chiefly of yeomanry, dashed into the mass, trampling down many persons of both sexes under the horses' feet, and killing and wounding others with their sabres. The meeting was dispersed by these means, and Messrs Hunt and Johnston, the principal orators, were apprehended. The tragic nature of this event, and its appearing as an invasion of the popular right of meeting for redress of grievances, produced some marks of public resentment; but the magistrates who conducted the attack received the immediate and cordial thanks of the government.

When Parliament reassembled in November, there was an evident increase of attachment to the ministry; and, in addition to the strong measures already taken for suppressing popular discontent, acts were passed to suppress unstamped political publications, to prevent secret training to arms, and to restrict the right of calling a public meeting to magistrates.

The year 1819 was remarkable, among other things, for the provision made, by act of Parliament, for the resumption of cash payments at the bank.

On the 20th of January 1820, George III. died at Windsor, in his eighty-second year, without having experienced any lucid interval since 1810. The Prince Regent was immediately proclaimed as GEORGE IV.; but there was no other change to mark the commencement of a new reign. A few days after the decease of George III., the Duke of Kent, his fourth son, died suddenly, leaving an infant daughter, Victoria, with a very near prospect to the throne.

MISCELLANEOUS CIRCUMSTANCES FROM 1790 TO 1820.

Owing to the superiority of Britain at sea, she was able to preserve her commerce during the war, while that of France was comparatively ruined. This circumstance, combined with the remarkable effects of machinery in various manufactures, and the great improvements effected in agriculture, maintained the prosperity of the country during a contest which otherwise must have sunk her as low as it did Austria and Prussia. The value of the exports, which had been fifteen millions in 1760, and had only advanced to twenty in 1790, was, in 1802, *forty-six millions*.

This period is above all things memorable for the introduction of the use of steam in navigation. A model vessel, with a small steam-engine on board, was tried in 1788 by Mr Patrick Miller of Dalswinton in Dumfriesshire. Soon after, a vessel on a larger scale was exhibited in perfect action on the Forth and Clyde Canal. The idea fell asleep for a few years, but was revived by Mr Fulton, an American, who, in 1807, set agoing a steam-vessel on the Hudson River, the first in the world which was regularly employed in conveying passengers. In 1812, Mr Henry Bell of Helensburgh launched a similar vessel on the Clyde, being the first seen in Europe; and from that period steam-vessels quickly became numerous. Their superiority, in propelling vessels without regard to wind or tide, was in time universally acknowledged; and ultimately they have been used in voyages across large oceans.

In this period, considerable efforts were made for the more general education of the people. Sunday schools, first suggested by Mr Raikes of Gloucester, overspread the whole country, and proved the means of instructing many children who otherwise would have remained altogether ignorant. A plan of teaching great numbers of children, by employing the best pupils as monitors or assistants, was originated by Dr Bell and Mr Joseph Lancaster, and widely introduced. Two great societies were formed for the purpose of setting up and supporting schools in the districts where they were most needed. This period also beheld the rise of various societies, whose object it was to send missionaries to convert the heathen in distant lands, and to disseminate Bibles both at home and abroad. Great efforts were at the same time made in Britain to put an end to slavery in the West India colonies.

The latter part of the reign of George III. was also distinguished by great improvements in the dress and social condition of the people. Old fashions gradually disappeared, and the more simple and agreeable costume of the present day came into use. In the year 1750, cocked hats, wigs, swords, and buckles, were generally worn, and all gentlemen used hair powder. From the year 1790 to about 1800, these and many other oddities completely disappeared. Speedy travelling by stage-coaches, and the rapid transmission of letters by mail-carriages, became at the same time general in all parts of the United Kingdom.

At no period did a more brilliant class of literary men exist. Poetry assumed new and attractive forms in the works of Campbell, Moore, Southey, Wordsworth, Byron, and Scott. The novel or fictitious tale was advanced to a dignity it had never known before, in consequence of the production, by Sir Walter Scott, of a series of such compositions, in the highest degree dramatic and entertaining. In the Edinburgh and Quarterly Reviews, periodical criticism acquired an importance it never before possessed. At the same time, the more grave walks of divinity, history, and travels, were filled by respectable body of writers. The name of Sir Humphry Davy stands pre-eminent in science, which was also cultivated with distinguished success by Wollaston, Leslie, Playfair, and Robison. In philosophical literature, the names of Dugald Stewart and Thomas Brown merit peculiar respect.

REIGN OF GEORGE IV.

At the time when George IV. commenced his reign, the Manchester affair and the recent proceedings of the ministry, had inspired a small band of desperate men with the design of assassinating the ministers at a cabinet dinner, and thereafter attempting to set themselves up as a provisional government. On the 23d of February 1820, they were surprised by the police in their place of meeting, and, after a desperate resistance, five were seized, among whom one Thistlewood was the chief. These wretched men were tried for high treason, and executed. Nearly about the same time, an attempt was made by the workmen in the west of Scotland to bring about some alteration in the state; and two men were executed.

On the accession of the king, his consort's name had been omitted from the liturgy. This and other indig-

nities induced her to return from a voluntary exile in Italy, June 1820, to the great embarrassment of the king and his ministers. Her majesty, who had long been befriended by the Opposition, was received by the people with the warmest expressions of sympathy. Whatever had been blameable in her conduct was overlooked, on account of the greater licentiousness of life ascribed to her husband, and the persecutions which she had suffered for twenty-four years. The king, who had established a system of observation round her majesty during her absence from the country, caused a bill of pains and penalties against her to be brought (July 6) into the House of Lords, which thus became a court for her trial. Messrs Brougham and Denman, who afterwards attained high judicial stations, acted as counsel for her majesty, and displayed great dexterity and eloquence in her defence. The examination of witnesses occupied several weeks; and nothing was left undone which might promise to confirm her majesty's guilt. But no evidence of criminality could soften the indignation with which almost all classes of the community regarded this prosecution. Though the bill was read a second time by a majority of 28 in a house of 218, and a third time by 108 against 99, the government considered it expedient to abandon it, leaving the queen and her partisans triumphant.

In July 1821, the coronation of George IV. took place under circumstances of great splendour. On this occasion, the queen made an attempt to enter Westminster Abbey, for the purpose of witnessing the ceremony, but was repelled by the military officers who guarded the door; an insult which gave such a shock to her health, as to cause her death in a few days. During the month of August, the king paid a visit to Ireland, where he was received with much cordiality by all classes of that excitable people, notwithstanding his known hostility to the Catholic claims. In September, he paid a visit to the kingdom of Hanover. In August of the ensuing year, he completed this series of visits by a voyage to Scotland, where, owing to the novelty of the occasion, and the historical associations which it was the means of awakening, he was also received with extreme kindness. During his absence in Scotland, his leading minister, the Marquis of Londonderry (formerly Lord Castlereagh), put an end to his own life, in consequence of a morbid sense of the difficulty of his position in regard to continental affairs. The successor of the Marquis of Londonderry in the direction of foreign affairs was Mr George Canning, who had quitted the cabinet two years before on account of the prosecution of the queen, and was at this time preparing to leave the country as governor-general of India. Mr Canning was a statesman of enlightened and humane spirit, and among other popular qualities, possessed a rich and classical style of parliamentary eloquence.

JOINT-STOCK MANIA—COMMERCIAL EMBARRASSMENTS.

The two ensuing years were characterised by an extraordinary activity in almost all departments of trade and commerce. Mr Huskisson, an able commercial minister introduced by Mr Canning, originated several measures highly important; especially the repeal of all duties on goods passing between Great Britain and Ireland—an alteration in the duties affecting the silk manufacture—the repeal of the combination laws, and of the law against the emigration of artisans; while the executive formed commercial treaties, on the reciprocity system, with various countries of Europe; and, acknowledging the independence of the revolted Spanish colonies in America, drew them as additional customers into the British market.

Capital now so far exceeded the ordinary means of its employment, that many joint-stock companies were formed, as a means of giving it a wider range than that to which it was usually limited. Some of these associations professed objects which were by long-established usage the proper business of individuals alone, and others involved hazardous and visionary projects, which were to be carried into effect in remote countries. The depressed state of trade in 1821 and 1822, had led to a diminished importation and production of goods, and been succeeded by an advance of prices in 1823. The consequence was a sudden and unusually active demand, and a powerful reaction of supply, which did not cease till production had far exceeded the bounds of moderation. Through the facilities afforded by large issues of paper money, the delusion was kept up longer than it would otherwise have been. The first symptom of something being wrong, was the turning of the exchange against England. A diminution of issues at the bank followed. Merchants began to feel a difficulty in answering pecuniary obligations. Then took place a run upon the banks, some of which, both in London and in the country, were obliged to stop payment. Between October 1825 and February 1826, fifty-nine commissions of bankruptcy were issued against English country banks, and four times the number of private compositions were calculated to take place during the same period. While the merchant and manufacturer were without credit, their inferiors were without employment, and distress reached almost every class of the community. Some liberal pecuniary measures on the part of the Bank of England, helped in a short time, rather by inspiring confidence than by actual disbursement of money, to retrieve in some measure the embarrassed circumstances of the country.

CANNING'S ADMINISTRATION—CATHOLIC EMANCIPATION.

In the spring of 1827, the illness of Lord Liverpool (followed soon after by his death) opened the way for Mr Canning's promotion to the first place in the administration; on which occasion, for various reasons of a personal as well as political character, the more uncompromising class of Tories resigned their places, leaving the reins of government in the hands of a comparatively popular party. Mr Canning, however, sank under the new load imposed upon him, and died in the ensuing August. His friend Lord Goderich succeeded as premier; but resigned in January 1828, when the Duke of Wellington was appointed in his place, with Mr (afterwards Sir) Robert Peel as secretary for the home department.

From the year 1805, the Catholic claims had been a prominent subject of parliamentary discussion, and since 1821 they had been sanctioned by a majority in the House of Commons. Almost despairing of their cause, while left to the progress of mere opinion in the English aristocracy, the Irish Catholics had in 1824 united themselves in an Association, with the scarcely concealed purpose of forcing their emancipation by means of a terrifying exhibition of their physical strength. An act was quickly passed for the suppression of this powerful body; but it immediately reappeared in a new shape. In fact, the impatience of the Catholic population of Ireland under the disabilities and degradation to which they were subjected on account of religion, was evidently becoming so very great, that there could be little hope of either peace or public order in that country till their demands were conceded. Though the English public lent little weight to the agitation, and the king was decidedly hostile to its object, Catholic emancipation rapidly acquired importance with all classes, and in all parts of the empire. In the spring of 1828, a kind of preparation was made for the concession, by the repeal of the test and corporation oaths, imposed in the reign of Charles II.

The ministry soon after received an alarming proof of the growing force of the question. Mr Vesey Fitzgerald had vacated his seat for the county of Clare, on becoming president of the Board of Trade. He was a friend to emancipation, and possessed great influence in the county; but he was also a member of an anti-Catholic administration. As an expedient for annoying the ministry, the Catholic Association, and all the local influences on that side, were set in motion to procure the return of Mr Daniel O'Connell, the most distinguished orator of the Catholic party. To the surprise of the nation, Mr O'Connell was returned by a great

majority. It was even surmised that the laws for the exclusion of Catholics from Parliament would be unable to prevent him from taking his seat. The Duke of Wellington now began to see the necessity of taking steps towards a settlement of this agitating question; and the first, and most difficult, was to overcome the scruples of the sovereign. At the opening of the session of 1829, in consequence of a recommendation from the throne, bills were introduced by ministers for removing the civil disabilities of Catholics, and putting down the Catholic Association in Ireland; and notwithstanding a great popular opposition, as well as the most powerful exertions of the older and more rigid class of Tories, this measure was carried by a majority of 353 against 180 in the House of Commons, and by 217 to 112 in the House of Lords.

REIGN OF WILLIAM IV.

The agitations respecting the Catholic Relief Bill had in some measure subsided, when, June 26, 1830, George IV. died of ossification of the vital organs, and was succeeded by his next brother, the Duke of Clarence, under the title of WILLIAM IV. About a month after, a great sensation was produced in Britain by a revolution which took place in France, the main line of the Bourbon family being expelled, and the crown conferred upon Louis-Philippe, Duke of Orleans. By this event, a great impulse was given to the reforming spirit in Britain, and the demands for an improvement in the parliamentary representation became very strong. The consequence was the retirement of the Wellington administration in November, and the formation of a Whig cabinet, headed by Earl Grey. The agitations of the time were much increased by a system of nocturnal fire-raising, which spread through the south of England, and caused the destruction of a vast quantity of agricultural produce and machinery.

The Whig ministry came into power upon an understanding that they were to introduce bills for parliamentary reform, with reference to the three divisions of the United Kingdom. These, when presented in March 1831, were found to propose very extensive changes, particularly the disfranchisement of boroughs of small population, for which the members were usually returned by private influence, and the extension of the right of voting in both boroughs and counties to the middle classes of society. The bills accordingly met with strong opposition from the Tory, now called the Conservative party. By a dissolution of Parliament, the ministry found such an accession of supporters as enabled them to carry the measure through the House of Commons with large majorities; but it encountered great difficulties in the House of Lords; and it was not till after a temporary resignation of the ministry, and some strong expressions of popular anxiety respecting reform, that the bills were allowed to become law.

During the few years which followed the passing of the Reform Bills, the attention of Parliament was chiefly occupied by a series of measures which a large portion of the public deemed necessary for improving the institutions of the country, and for other beneficial purposes. The most important of these, in a moral point of view, was the abolition of slavery in the colonies, the sum of twenty millions being paid to the owners of the negroes, as a compensation for resigning a right of property which had long been a disgrace to humanity. By this act, eight hundred thousand slaves were (August 1, 1834) placed in the condition of freemen, but subject to an apprenticeship to their masters for a few years.

In the same year, an act was passed for amending the laws for the support of the poor in England, which had long been a subject of general complaint. One of the chief provisions of the new enactment established a government commission for the superintendence of the local boards of management, which had latterly been ill-conducted, and were now proposed to be reformed. The able-bodied poor were also deprived of the right which had been conferred upon them at the end of the eighteenth century, to compel parishes to support them, either by employment at a certain rate, or pecuniary aid to the same amount: they were now left no resource, failing employment, but that of entering poor-houses, where they were separated from their families. The contemplated results of this measure were a reduction of the enormous burden of the poor-rates, which had latterly exceeded seven millions annually, and a check to the degradation which indiscriminate support was found to produce in the character of the labouring-classes.

On the renewal of the charter of the East India Company in 1834, the government deprived it of its mercantile privileges, and extended the right of trading with China to the community at large. The ancient policy of not allowing Europeans to settle in Hindoostan was also departed from, under some restrictions of inferior importance. Some reforms, equally advantageous to the public, were effected in the administration of the law, and in the privileges held by the Bank of England.

In 1833, a reform took place in the mode of electing the councils and magistracies of the Scottish boroughs. Instead of regulations which took their rise in an early age, and had been found productive of mismanagement, the parliamentary constituencies were empowered, in all except a few cases, to choose the requisite number of councillors, to whom then belonged the duty of appointing the requisite number out of their own body to act as magistrates. In 1835, the English municipal corporations were reformed, upon a principle similar to that applied to Scotland, except that the rate-payers and freemen were designed to form the electoral bodies, and that the councils in most cases were to consist of a greater number of members. A modified reform of the same nature took place in Ireland, by virtue of an act passed in 1840.

During the summer of 1834, the ministry endeavoured to carry through Parliament a bill to enable them to take unusual measures for restraining turbulence in Ireland. In consequence of a difficulty experienced in passing the measure, Lord Althorp and Earl Grey resigned their situations. The latter, who had now passed his seventieth year, was anxious for other reasons to retire from more active life, in order to spend the remainder of his days in the bosom of his family. He withdrew with the admiration of all parties, his whole career having been marked by consistency and sincerity. His place was supplied by Viscount Melbourne, and Lord Althorp was induced to resume office. The Irish Coercion Bill, with certain modifications, was then passed.

In November, the death of Earl Spencer caused the advancement of his son Lord Althorp to the House of Peers, and the ministry was then left without a leader in the House of Commons. The king, who had for some time inclined to the Conservative party, took advantage of this circumstance to dissolve the cabinet. The Duke of Wellington was again called into office, and a messenger was despatched to Italy to bring Sir Robert Peel home from that country, in order to accept the premiership. Sir Robert hastened to London, and on the 10th of December, the new ministry was constructed, chiefly of the individuals who lost office in 1830. Sir Robert, though sensible of the difficulty of conducting public affairs at such a time, resolved to do the utmost to conciliate popular favour, by entering upon reforming measures. In a new House of Commons, his party was strengthened by nearly a hundred new votes; but he was still in a minority. After bringing forward a variety of measures of a reforming character, being defeated on the question of devoting some part of the Irish church revenues to education, he was compelled to resign (April 8, 1835), and allow the Melbourne ministry to be replaced.

In the session of 1836, the ministry were defeated, by majorities in the House of Lords, in attempts to carry several important measures of reform, but succeeded in passing an act for commuting tithes in England into a corn-rent charge payable in money; also in an act for enabling dissenters in England to be married other-

wise than by the established clergy; and another for a general registry of births, deaths, and marriages. They likewise reduced the stamp-duty on newspapers to one penny, by which the circulation of that class of publications was very largely increased. From this time, there was a marked diminution in the zeal which had for some years been manifested for changes in the national institutions. Early in 1837, the ministry again introduced into the House of Commons a bill for settling the Irish tithe question; but before this or any other measure of importance had been carried, the king died of ossification of the vital organs (June 20), in the seventy-third year of his age, and seventh of his reign, being succeeded by his niece, the PRINCESS VICTORIA. The deceased monarch is allowed to have been a conscientious and amiable man, not remarkable for ability, but at the same time free from all gross faults.

COMMENCEMENT OF THE PRESENT REIGN.

Queen Victoria began to reign June 20, 1837, having just completed her eighteenth year; was crowned on the 28th of June in the following year; and was married to her cousin, Prince Albert of Coburg and Gotha, February 10, 1840. This union has now (February 1849) been followed by the birth of two princes and four princesses—thus giving new security to the continuance of the present dynasty. In the autumns of 1842, '44, '47, and '48, her majesty visited Scotland, but on each occasion more in a private than in a state capacity; residing at the mansions of the nobility that lay in her route to the Highlands, where the Prince Consort enjoyed the invigorating sports of grouse-shooting and deer-stalking. In 1843 she paid a visit, entirely divested of state formalities, to the late royal family of France; and shortly after made another to her uncle, the king of the Belgians. In 1845, besides making the tour of the English midland counties, the royal pair visited the family of Prince Albert at Coburg and Gotha; receiving the attentions of the various German powers that lay on their outward and homeward route. Her majesty has received in turn the friendly visits of several crowned heads, among whom have been the ex-king of the French, Leopold of Belgium, the king of Saxony, and the emperor of Russia. Such interchanges and attentions are not without their importance; at all events they are characteristic of a new era in the international history of Europe.

The Whig ministry and measures, which had for some time been on the decline, were set aside by a vote of 'no confidence' in the summer of 1841; a dissolution of Parliament was the consequence; and after the new elections, the Opposition was found to be so far in the ascendancy, that Viscount Melbourne tendered his resignation, and retired from public life, leaving Sir Robert Peel again to take the helm of affairs. The Parliament of 1841, under the direction of the Peel ministry, was in many respects one of the most important during the reigning dynasty. Besides passing several measures of benefit to the internal management of the country, it established, by the abolition of the corn-laws and other restrictive duties, the principles of free trade, and in that course Britain has since been followed by other nations; it gave, by the imposition of a property and income tax, a preference to the doctrine of direct taxation; it countenanced in all its diplomatic negotiations the duties and advantages of a peace policy; and engaged less with political theories than with practical and business-like arrangements for the commerce, health, and education of the country. In consequence of ministerial differences, Sir Robert Peel tendered his resignation as premier in June 1846, and was succeeded in office by Lord John Russell, to whom was assigned the further task of carrying out the principles of free trade, of legislating for Ireland in a time of dearth and famine (caused by successive failures of the potato crop), and of adopting some plan of national education—a subject which has been too long neglected in this otherwise great and prosperous empire.

Since the accession of her majesty, Britain has been on the most friendly terms with the other nations of Europe—co-operating with them in the extension and liberation of commerce, the continuance of peace, the suppression of slavery, and the advancement of other measures of importance to civilisation; and it is fondly hoped that the recent and still unsettled constitutional changes in France, Germany, Austria, and Italy, will not affect in any material degree this gratifying progress of peace and social improvement. In the East, a short, but somewhat cruel war with China has opened up a new and more liberal system of trade with that country; an unnecessary aggression upon Affghanistan was followed by a disastrous defeat of our troops, and their subsequent withdrawal from that country; and an extension of British rule has taken place in India after several severe battles with the forces of the Sikh territory. The disputed boundaries between British America and the United States have been determined by friendly negotiation; thus giving permanency in the new world as well as in the old to the spirit of peace and national brotherhood.

MISCELLANEOUS CIRCUMSTANCES FROM 1820 TO 1849.

This period is remarkable for the great efforts which were made to diffuse knowledge more generally amongst the people. *Mechanics' Institutions* were formed in most of the larger towns, for the instruction of that class of the community in mechanical and natural science. Various periodical works of a cheap nature were also set agoing, for the purpose of communicating science and other branches of knowledge, in such forms as to be intelligible to the less educated classes. At the same time, considerable efforts were made by means of ordinary schools, schools of design, philosophical associations, and the like, to extend still further the benefits of education. Amongst the individuals who sought to promote these objects, the most conspicuous was Lord Brougham, who filled the office of Lord Chancellor in the Grey administration. Important progress was also made in the matter of public health: the erection of baths, the laying out of parks for recreation, the enforcement of better sewerage, the prohibition of underground dwellings, and the dissemination of sounder views as to cleanliness and ventilation, being features peculiar to the period. Great improvement was likewise effected in our prison discipline by the erection of appropriate jails, and a careful classification and treatment of criminals; while, with a view to lessen juvenile depravity, Industrial Schools were established in many of the more populous towns.

In this period, also, the national energies were chiefly turned towards the arts of peace, and accordingly the prosperity of the country made, upon the whole, great advances. Though agricultural produce had ceased to bring the high prices it realised during the war, the farmers paid equally high, or even higher rents; and this they were enabled to do in consequence of the soil having been so much improved by draining, manuring, and the introduction of more scientific modes of culture. During this period, steam navigation, both coastwise and to foreign parts, was immensely increased; ordinary roads were improved by the mode of paving invented by Mr Macadam; railways began to overspread all parts of the country, for the conveyance of goods and passengers, by means of steam locomotives, the ordinary speed of which is upwards of thirty miles an hour; the electric telegraph was put in operation; iron was extensively applied to ship-building, especially to the construction of steamers; machinery of every description was much improved, and its application extended to almost every known process. The last twenty years have also been marked by considerable social advancement; for although discontent and outbreaks have occurred in certain localities, in consequence of occasional stagnation in trade, the dearth of provisions, and supposed political grievances, yet the general aspect of the country has been one of peace and progress, tending to a diminution of the graver crimes, and to more correct views both as to moral and physical relations.

CONSTITUTION AND RESOURCES OF THE BRITISH EMPIRE.

The British Empire consists of the United Kingdom of Great Britain and Ireland (including a number of minor islands around their shores), and of several colonies and other dependencies in different quarters of the world.* The most remarkable peculiarity in the political condition of the British Empire, is the high degree of civil and religious liberty which all classes of subjects practically enjoy. Slavery exists in no quarter of the British dominions: personal freedom, with liberty to come and go, unquestioned and unimpeded, is assured to all, without respect of birth, rank, profession, language, colour, or religion.

Britain, while in population and some other respects surpassed by several other nations, possesses a degree of wealth and political influence which may be said to place her at the head of all nations. This unprecedented affluence and power appears to have taken its rise in a fortunate concurrence of favouring circumstances, some of a physical and others of a moral character. The first of the physical causes in importance is unquestionably the insular situation, at once protecting the country from the destructive invasions which have so much depressed and retarded many continental states, and furnishing opportunities for a ready commerce with all the shores of the civilised world. The second of these causes is to be found in the natural fertility of a large portion of the United Kingdom, and the temperate climate enjoyed by it, favouring the production of the food necessary for a large population. A third cause is the large amount of her mineral and metallic stores, furnishing her with the means of prosecuting manufactures to an extent beyond all which the world has ever before had experience of. Thus Britain has been naturally qualified to become the seat of a great agricultural, manufacturing, and commercial nation, and must always, from the nature of things, have tended to assume that character. Moral causes, likewise, have had a powerful effect. The stock of the British population happens to have sprung from the Teutonic branch of the Caucasian variety of the human species, which has in many countries proved the superiority of its intellectual and moral organization. The idea of trial by jury, and of arranging public affairs by a representative body, hit upon at an early period by this race, show that it possesses a natural aptitude for forming improved political institutions. Its connection with most of the important inventions of modern times shows its ingenuity in the arts. Its maritime enterprise and mercantile intrepidity were testified at a time when other nations were engaged only in feudal broils. Planted in England in the fifth century, and probably in Scotland many centuries before, we see this people making a continual advance ever since in political institutions and in the arts of peace. Historians point out the accidents which effected conspicuous changes; but while the feebleness and wickedness of a John may have been the immediate cause of the Magna Charta, and the passions of Henry VIII. the proximate cause of the reformation of religion, there must have also been something in the people pressing them irresistibly towards liberty of person and of conscience, and enabling them to overcome all obstacles to the accomplishment of those objects. It was in the nature of the people to establish free institutions—and they were established. A people so active and so ingenious could not fail to take advantage of the natural facilities which they enjoyed for manufactures and commerce. They made the best of blades in the days of Cœur de Lion, and in the time of Elizabeth their sails whitened every neighbouring sea. Arts, driven out of other countries by ruthless bigotry, found refuge and flourished amongst a people who eagerly grasp at every kind of employment which promises to be useful. It is to their persevering industry, exercised by favour of so many natural circumstances, and constantly protected by free institutions, that we are mainly and most immediately to look for the source of the greatness of the British Empire.

* For an account of the physical features, natural products, political and civil divisions of Great Britain and her dependencies, the reader is referred to the Geographical Nos. from 63 to 70 inclusive.

FORM OF GOVERNMENT.

The government of the United Kingdom is constitutional, or possesses a regular form, in which the civil rights of all classes are acknowledged and guaranteed. The constitution is a monarchy, in which the sovereign accepts of his dignity under an express agreement to abide by certain prescribed forms of government according to the laws of the realm, and to maintain inviolate the Protestant religion, with all the rights and privileges of the church. The sovereign is the head or directing power in the executive of government, the fountain of all honours, and the watchful guardian of the interests of the state: he is held to be incapable of doing wrong; and if an unlawful act is done, the minister instrumental in that act is alone obnoxious to punishment. The legislative part of the government is composed of two deliberating bodies—the House of Lords and the House of Commons, both of which consist of individuals belonging to the United Kingdom only, the colonial dependencies of the empire having no share in the general management.

The persons who compose the *House of Lords* form a separate class or rank, which is called collectively the Peerage, whose members enjoy certain exclusive privileges and honours. The members of the House of Lords are either lords spiritual or temporal. The spiritual lords are archbishops and bishops, and hold their seats for life in virtue of their ecclesiastical office; the temporal lords enjoy their seats from hereditary right, or in virtue of being elevated to the peerage. In 1848, the number of members of the House of Lords was 436—namely, 2 princes of the blood royal, 2 English archbishops, 20 dukes, 17 marquises, 115 earls, 20 viscounts, 24 English bishops, 4 Irish prelates, 192 barons, 16 representative peers of Scotland, and 26 representative peers of Ireland. The House of Lords is liable at all times to an increase of number by the elevation of commoners to the peerage; but this prerogative of the crown is sparingly used. The number also fluctuates in consequence of there usually being several minors among the hereditary peers; at present, for instance, there are fourteen under age.

The House of Commons consists at present (February 1849) of 656 members; of whom 253 are chosen by counties, 6 by universities, and 397 by cities, boroughs, and towns. England returns 469, Wales 29, Ireland 105, and Scotland 53. The number of persons entitled to vote in the election of these members is above a million; of whom about 620,000 vote for county members, 5000 for representatives of universities, and 440,000 for members for cities, boroughs, and towns. The great bulk of the voters, as settled by the Reform Acts of 1832, is composed of the agricultural tenantry and the occupants of houses of £10 of yearly rent; in other words, the middle classes. The operative classes, on account of not in general inhabiting houses of such value, possess little direct influence in the election of members of the House of Commons. The qualifications of an elector in counties are—a title to have voted on a freehold qualification before the passing of the Reform Act, the possession of freehold property to the value

of 40s. annually, or of land in copyhold of the clear annual value of ten pounds, the possession of land or houses of ten pounds annual value in property, or of a lease of not less than sixty years in England, and fifty-seven in Scotland, and the occupation of lands or tenements in England for any period, and in Scotland for nineteen years, at an annual rent of not less than fifty pounds. The qualification of an elector in boroughs is the occupation of a house of ten pounds annual rent; the resident freemen in English and Irish boroughs being also allowed to vote. A House of Commons cannot legally exist for more than seven years; but, in reality, it rarely exists so long; the death of the sovereign, change of ministry, and other circumstances, causing a renewal on an average every three or four years. Reckoning from 1802 till November 1847, there were fifteen Houses of Commons; as the fifteenth still exists (February 1849), we have an average of three years for each: those of longest duration were the fourth, from 1807 to 1812; the fifth, from 1812 to 1818; and the fourteenth, from 1841 to 1847.

The Houses of Lords and Commons compose the *Parliament*. The Parliaments of England and Scotland were united in 1707, and then called the British Parliament. In 1800, the Irish Parliament merged in the British Parliament. The three kingdoms were first represented in one Parliament in 1801. Since that period it has been entitled the *Imperial Parliament*, and is always convened at Westminster.

The two Houses, with the sovereign, compose the three estates of the realm, or legislative body. The sovereign takes no personal concern in the proceedings of Parliament, further than opening or proroguing the sessions; but the interests of the crown in Parliament are intrusted to members of the cabinet council or ministry, and by them are defended and explained. The two Houses, with the sovereign, have the power to pass laws, impose taxes, borrow money, make inquiries into the management of the public revenues, or the transactions of the great officers of government, and even to bring the latter to trial, if necessary. Members of either House inquire into the manner in which all great public institutions or boards of management are conducted, such as those for education, for purposes of charity, for the erection of lighthouses on the coast, for the construction of harbours, and generally, indeed, into all the business which is intrusted to the executive part of the government; they cannot direct what is to be done, but may always make scrutiny into it afterwards, if any error or mismanagement has taken place. The discussions on these subjects are often very warm and eager, and bring to light facts of great public importance. No act of the two deliberative bodies becomes valid as a law without the assent of the sovereign; and all propositions relating to money to be raised for the public service, must originate with the House of Commons, the Lords merely giving their assent as a matter of form, without being allowed to alter anything. This circumstance gives a much larger share of influence to the Commons than is possessed by the Lords; the former having it in their power, when dissatisfied with the measures of government, to stop the supplies of money, and thus bring the whole machinery to a stand.

Each of the two Houses has one presiding member, whose duty it is to preserve order and see that the regulations of the assembly are attended to by the members; he is also the person through whom any communication passes between the House and the Queen, he alone having the privilege of addressing her majesty in name of the House. Hence, in the House of Commons, this officer is called the *Speaker;* in the House of Lords he is commonly known as the *Lord Chancellor*, from another office which he holds; but the duties of the latter are quite the same as those of the Speaker of the Commons. There are numerous forms established for the regularity of business in Parliament, but of these there are only a few which need be mentioned here. Any proposal which is laid before either of the Houses, in order to pass into a law, must be made out by its promoter *in the form* of an act of Parliament, but is only known by the name of a *bill* while under discussion: permission must first be obtained to introduce the bill, and it must then be read and considered by the House three several times, besides being once scrutinised more closely by a committee or select number of the members, and, if a public bill, by the whole House sitting as a committee, when each member is permitted to speak as frequently as he sees occasion, whereas in the regular sittings of the House no one is allowed to speak more than once, except to explain where his first statements have been misunderstood. If it is not rejected in any of these three readings, or given up in the committee, the bill is said to have passed. It must then go through the same process in the other House, where it is sometimes adopted, sometimes rejected; but if any alterations are made on it here, they must be reported to the House where it first originated. If the two cannot agree on the changes proposed, the bill falls to the ground; but some modification is generally contrived which satisfies both parties. It still remains to obtain the sanction of the sovereign, which is hardly ever refused, after which the *bill* becomes an *act of Parliament* or *law*.

The members of both Houses have certain personal privileges, which are deemed necessary for enabling them properly to attend to their public duties. In Parliament, they enjoy absolute freedom of speech, and cannot be questioned out of the House for anything said in the debates; they and their servants are exempted from arrest (except in criminal cases) during their attendance in Parliament.

The *Executive*, as already stated, is reposed in the hands of a sovereign. The dignity of the sovereign is hereditary in the family of Brunswick, now on the throne, and in the person of either a male or female. A queen reigning, therefore, enjoys the same privileges as a king. Besides enforcing the laws of the realm, through the medium of courts of justice, and a variety of functionaries, the sovereign is charged with the office of levying taxes granted for the public service, and of defending the empire at home or abroad against foreign enemies. He, or she (with reference to our present sovereign), also conducts all intercourse with the rulers of other nations, forming treaties and alliances, declaring war or concluding peace. She has the duty of protecting the persons and trade of British subjects in foreign countries. For this purpose, she has the sole appointment of the officers who perform these duties; of judges in the several courts of law; of officers in the army and navy; of public ambassadors, and of consuls at foreign ports for the safety of trade; and of the officers who levy the taxes. She has also large forces, both naval and military, at her disposal, which are stationed in different parts of the empire where she or her advisers think that they are wanted for the time. The task of managing all these extensive concerns, which would fall into confusion in the hands of one person, is deputed by the Queen to a number of persons, who are denominated her *Ministers*, and sometimes the *Cabinet*. These are nominally selected and appointed by the Queen herself; but as her choice would be in vain if it were to fall on men who were disagreeable to Parliament (which might in that case refuse to grant supplies for national business), the ministry is generally chosen from among such men as enjoy a considerable share of public confidence. They have all some high state office. The chief is the *First Lord of the Treasury*, whose nominal duty is the receiving and issuing of the public money, while his actual station is that of leader of the administration; he is the first who is appointed in any ministry, and generally selects all the other members, according to his own views of their abilities, or of the influence they possess in the country or in Parliament; and any changes afterwards made are generally at his suggestion, or at least with his full assent. Next is the *Lord High Chancellor*, who presides in the highest law-court of the kingdom, and is Speaker of the House of Lords;

he is chief adviser of the sovereign in all that relates to the laws of the country, and has the disposal of a great number of clerical and law offices. After him are the principal secretaries of state, who are five in number, each having a separate charge; the first is Secretary for the Home Department, after whom are the Secretaries for Foreign Affairs and for the Colonies, the Secretary at War, and the Secretary for Ireland. These, with the Chancellor of the Exchequer, the first Lord of the Admiralty, the Master-General of the Ordnance, the President of the Board of Control, and one or two others, constitute what is called the *Ministry*, the *Cabinet Council*, or briefly the *Cabinet;* and all the measures of the executive government are settled by their deliberations. Besides this body, the Queen has a *Privy Council*, consisting of persons eminent from rank, office, or personal character, who may be at variance with the Cabinet Council, but who take no share in the government, except when summoned by the royal authority. They are then in the same situation with the cabinet ministers, and become responsible for the advice they give.

The regular division of labour which is established in the British government, under the respective heads of the Cabinet, Treasury, Exchequer, Board of Trade, Mint, Revenue Boards, Admiralty, War Office, &c. is one of its chief excellencies; because every secretary, or other officer of state, having a particular department assigned to him, the responsibility for any error or mismanagement is established at once, and may be either rectified or punished. Parliament itself has its duties; and when these are not performed to the satisfaction of the electors, the members can be dismissed at next election, to make way for others.

The British constitution, thus slightly sketched, may be generally described as an anomaly in political science, being both professedly and in reality a mixture of all the three kinds of government—monarchical, aristocratical, and democratical. Such a government would probably be found totally inapplicable in other societies; but in Britain it answers well, having grown up in conformity with the views and character of the people, and enjoying, in consequence of that conformity, and of its long existence, the respect required to enable any system to work. Upon the whole, notwithstanding the Reform Acts, the aristocratic principle predominates, yet fully as much from the spirit of the people themselves, as from any forms of the constitution.

DISPENSATION OF LAWS.

Justice, civil and criminal, is administered in England and Ireland according to laws and forms which took their rise in the former country, and were in time extended to the latter. The English law, as it is comprehensively termed, is of two kinds—written or statute law, consisting of the laws established by acts of Parliament, and consuetudinary law, consisting of customs which have existed from time immemorial, and have received the sanction of the judges. Consuetudinary law is again divided into common law and equity; the former is administered by courts which profess to adhere strictly to the old laws of England, except in as far as they are altered by statute; the latter was founded upon the principle that the king, in cases of hardship, was entitled to give relief from the strictness of the common law. Equity, though thus originated, has now become also a fixed kind of law, and is administered in courts which decide according to established rules.

The principal court for civil suits is the Court of Common Pleas. The Court of King's (or Queen's) Bench, which was at first only a criminal tribunal, and the Court of Exchequer, which was designed only to decide in cases concerning the revenue, have become civil courts by means of fictions in their respective modes of procedure. The Court of Chancery, presided over by the Lord Chancellor, administers the law of equity. Courts under these designations sit both in Westminster and in Dublin: there are also courts of assize, which, in England, perform six provincial circuits, in some instances once, and in others twice a year. Minor cases, criminal as well as civil, are judged by bodies of provincial magistracy, termed Justices of the Peace, who meet in every county once every quarter of a year. Besides the civil and criminal tribunals, there are ecclesiastical courts, which have jurisdiction in matters connected with marriage, wills, &c. and adopt the principles of the old canon law. There are also courts of Admiralty, which decide questions between persons of different nations, according to the code of civil law recognised throughout Europe.

Guernsey, Jersey, Alderney, and other small islands in the British Channel, which politically belong to the United Kingdom, possess a variety of peculiar privileges and legal usages. The Isle of Man, situated in the sea between England and Ireland, likewise possesses—absurdly enough—certain peculiar privileges.

In Scotland, laws peculiar to itself, founded upon the [illegible] of the Roman and the Feudal law, are administered by a supreme civil tribunal, denominated the [illegible], which remains fixed at Edinburgh, [illegible] tribunal, named the Court of Justiciary, not only sits in the same city, but makes [illegible] through the provinces. Minor civil and criminal cases are also judged in Scotland by the sheriffs of the various counties, and the magistrates of the boroughs. Scotland possesses the advantage of public prosecution of offences, the injured party being only a complainer to the public prosecutor. The chief public prosecutor is the Lord Advocate; the inferior public prosecutors, in connection with the various minor courts, are termed Procurators-Fiscal. The whole expense of prosecution is defrayed by the national exchequer.

The peculiar boast of the criminal law of the British Empire, is the *Jury*. In England and Ireland, where the principle of the criminal law requires the injured party or his representative to prosecute, he can only do so by permission of a jury of accusation, called the Grand Jury; another jury sits for the purpose of deciding if the evidence against the accused has established the guilt. These juries consist in England and Ireland of twelve men, whose verdict must be unanimous; in Scotland, the jury upon the charge consists of fifteen men, who decide by a plurality of votes. The jury is an institution of Scandinavian origin, transmitted to Britain through the Saxons; and it is justly considered as a most efficient protection of the subject from the vindictiveness of power. Civil cases, turning upon matters of fact, are likewise decided in all parts of the United Kingdom by juries.

The House of Lords, as the great council of the sovereign, acts as a court of last appeal from the civil tribunals of Britain and Ireland. Practically, the business of hearing these appeals is undertaken by some law lord, such as the Lord Chancellor, who, as there must be three persons present, is usually accompanied by a temporal peer and a bishop. Before deciding, the House sometimes demands the opinions of the English judges. Independently of their power as judges of appeal, the peers act as a criminal court in all cases where a peer of the realm is tried for a capital crime.

The laws and judicial usages of England are extended to most of the colonial possessions, along with all the rights and privileges which are common to British subjects. Hence the inhabitants of the most distant part of the empire, whatever be their origin, rank, or colour, are entitled by the constitution to enjoy the same degree of civil and religious liberty, and the same careful protection of life and property, as their fellow-subjects in the mother country. This is an invaluable boon, for in no nation do the people practically enjoy greater liberty of speech or action (without licentiousness), and in none is the press more unshackled. Next in point of value to the privilege of trial by jury, the British subject places the *right of petition* to the Houses of Parliament, either for an improvement in the laws or a redress of grievances. As this involves the right of assembling publicly in a peaceful manner, or of *meeting constitutionally*, to dis-

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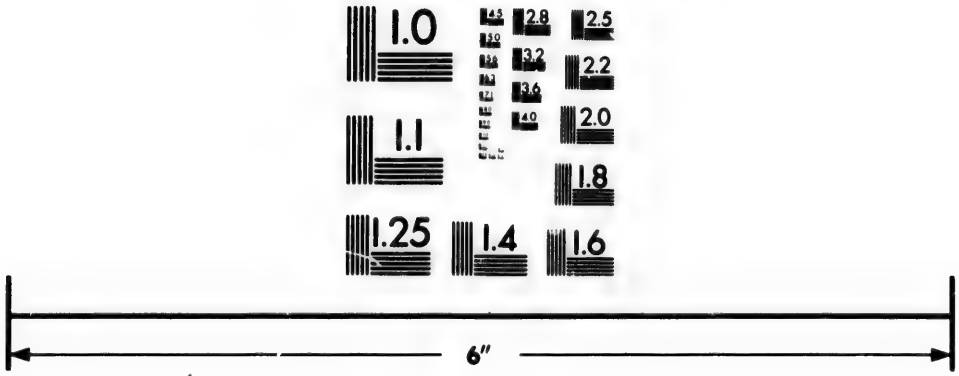

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cous measures of government and legislation, it is allowed to form the impregnable bulwark of British political freedom. [For further information on the legal usages of Great Britain and Ireland, the reader is referred to the HISTORY OF LAWS—forming No. 54 of the present volume.]

RELIGION AND THE CHURCH.

The United Kingdom is a Protestant state, but all religions (not offensive to public or private morals) may be professed, and their different forms of worship practised, without interference from any quarter whatever. All denominations of Christians have their own churches, employ whom they please as their pastors, and are equally under the protection of the law. The empire contains several established or predominant churches, which are supported by special acts of the legislature. In England and Ireland, there is one church, denominated the *United Church of England and Ireland* (separate before the union of the two countries in 1800), being a Protestant Episcopacy. In Scotland, the established religion is Protestant Presbyterian. According to the constitution, the religion of the English Church, and also the law of England, are established in every colony by the simple act of adding the territory to the crown, unless there be a special provision to the contrary. Thus the Church of England prevails in all the great colonial dependencies, except Lower Canada, which is guaranteed a Roman Catholic hierarchy; the Cape of Good Hope, which has been guaranteed Protestant Presbyterianism; Malta, which is Roman Catholic; and so on with some minor colonial possessions and dependencies.

Church of England.—The affairs of the church are managed by archbishops and bishops; but no step of any importance, out of the ordinary routine, can be taken without an act of Parliament, and therefore the church may be said to be governed by the legislature of the country. The sovereign is the head of the church, which is thus in intimate union with the state. The laity, except through their representatives in the House of Commons, possess no right to interfere in any shape whatever with the doctrines or practice of the church. The doctrines defined by law are contained in the Thirty-nine Articles, and the form of worship is the Book of Common Prayer. (See No. 75). Ecclesiastically, the country is divided into *dioceses*, each of which is under the care of a bishop or archbishop; the dioceses are classed under two *provinces*, each of which is under the charge of an archbishop—namely, the Archbishop of Canterbury, who is styled 'Primate of all England and Metropolitan;' and the Archbishop of York, who is styled 'Primate of England.' The other dignitaries of the church are archdeacons, deans, and prebendaries; the inferior clergy are rectors, vicars, and curates. Strictly, there are only three grades, bishops, priests, and deacons, all clergymen belonging to one of these. The bishops are entitled to be addressed as 'my lord,' being legally spiritual peers.

The revenues exigible by law for the support of the church are most unequally distributed, and the dioceses are of very unequal proportions. The following are the names of the English sees, with the amount of their incomes:—

Canterbury, L.15,000; Bangor, L.4000; Bath and Wells, L.5000; Carlisle, L.3000; Chester, L.4900; Chichester, L.4200; Durham, L.8000; Ely, L.5500; Exeter, L.3700; Gloucester and Bristol, L.3700; Hereford, L.4300; Lichfield, L.4500; Lincoln, L.4000; Llandaff, L.1000; London, L.11,700; Manchester, L.4900; Norwich, L.4465; Oxford, L.5000; Peterborough, L.4500; Ripon, L.4300; Rochester, L.3000; Salisbury, L.5000; St Asaph, L.4900; St David's, L.2500; Winchester, L.10,500; York, L.10,000; Sodor and Man, L.2000.—Total income, L.147,565.

The greater part of these revenues are derived from lands, or rents for grounds let on leases, and for which fines are taken at entry. The chapters of cathedrals, composed of deans, canons, and prebends, possess also large revenues, the dean of Durham, for instance, having £4800 a year, and other members of the chapter £32,160. In 1834, the gross revenues of the deans and chapters amounted to upwards of £235,000. The revenues of the inferior or parochial clergy are derived from tithes commuted into money payments, and also fees at celebrating marriages, baptisms, and funerals. With respect to the parochial branch of church emoluments, Mr M'Culloch remarks—'It appears that of 10,478 benefices, from which returns have been received, 297 are under £50 a year; 1629 are between £50 and £100 a year; and 1602 are between £100 and £150; so that there are 1926 benefices under £100 a year, and 3528, or more than a third of all the benefices in the country, under £150 a year. On many of these benefices there are no glebe houses, nor do they possess the means of erecting any.' Curates are paid by the rectors or vicars, whose servants they are: by law their salary cannot be under £80—the average is £81. The total revenues of the church may be stated in general terms as follow:—

Archbishops and bishops, L.150,000; cathedral and collegiate churches, L.250,000; deans and other functionaries, L.60,000; 10,540 parochial benefices, L.3,100,000; curates of resident clergy, L.87,000; curates of non-resident clergy, L.337,000.—Total revenue, L.3,984,000.

The appointment of the clergy to benefices is as follow:—Presented by the crown, 952; by archbishops and bishops, 1248; by deans, chapters, and ecclesiastical corporations, 2638; by universities, colleges, and hospitals, 721; by private individuals, 5096; and by municipal corporations, 53. This, says the authority already quoted, is not exactly correct, there being upwards of 200 omitted in the returns.

In 1847, the total number of congregations belonging to the established church was 12,060. At the same time there were the following number of congregations of dissenters:—Roman Catholics, 441; Presbyterians, 230; Independents, 1860; Baptists, 1210; Calvinistic Methodists, 431; Wesleyan Methodists, 2890; other Methodists, 693; Quakers, 384; Home Missionary congregations, 459—total of dissenting congregations (exclusive of Jews), 21,085. It is considered probable that this number includes as many actual worshippers as the 12,060 congregations of the establishment. The members of the established church have been estimated at 4,500,000; and those of dissenting bodies at 4,000,000; but all such estimates are exceedingly illusory.

Church of Ireland.—In Ireland, the established religion is the Protestant Episcopacy, of which another branch is established in England. Thus the same doctrines, ritual, and forms of ecclesiastical government, exist in these two countries, the hierarchies only being different with respect to their political status. At present, there are two archbishoprics—namely, Armagh, and Dublin; the incumbent of the former being 'Primate of all Ireland,' and that of the latter, 'Primate of Ireland, and Bishop of Glendalough and Kildare.' The number of dioceses are thirty-two, now consolidated under eleven bishops. There have hitherto been 32 deans and 30 chapters of cathedrals. The number of parishes, including perpetual curacies, is (or was lately) 2405, but many have no church, and the number of incumbents for the whole is 1385.

The revenues of the archbishops and bishops in 1848, amounted to £79,917 annually; and the total income of the church, including value of glebe-lands and tithes, was £865,535. The tithes of most parishes are now compounded for.

The Roman Catholic Church in Ireland consists of four archbishoprics, and twenty-three bishoprics, with parochial divisions and a body of clergy similar to the plan of the establishment; to it also belongs a considerable number of monasteries. After the Roman Catholic body, the chief dissenting communion is that of the Presbyterians in the northern parts of the country. According to law, two days throughout the year, exclusive of Sundays, are set apart as holidays, or sacred from labour, in England and Ireland—namely, Christmas and Good Friday. Of the Irish population, the Established Church lays claim to 52,000; the Presby-

terians to 642,000; the Catholics to 5,800,000; and other dissenting bodies to 24,000.

Church of Scotland.—Protestant Presbyterianism, according to a polity introduced from Geneva by Knox, was established in Scotland by act of Parliament in 1560, a few years after the previous Roman Catholic Church had been completely dismembered and suppressed. The history of the country describes the struggles of this form of church government with Episcopacy during the greater part of the seventeenth century. Shortly after the revolution, an act of Parliament of William and Mary in 1690, re-established Presbytery on the model of a statute of 1592. According to the plan thus established, and never afterwards materially altered, the clergy of the Church of Scotland are all equal in rank, and are officially ministers of parishes. To the church belongs a body of lay functionaries called elders, each church having several, who assist the clergyman at the communion, visit the sick, and generally act as a vigilant ecclesiastical police. This incorporation of laity with the church has given it a remarkably secure footing in the affections of the people. The ecclesiastical community is governed by a series of courts—the lowest being the kirk-session in every parish, composed of the minister and elders; the next is a court composed of the clergy of a division, called a Presbytery, and an elder from each parish; the next is a synodal court, composed of functionaries from an aggregation of Presbyteries; and the highest is the General Assembly, composed of delegates from the Presbyteries, and which meets annually at Edinburgh. Constant residence in their parishes is obligatory on the clergy.

The parochial clergy are supported by money stipends levied from the heritors or landowners, on the principle of commuted tithes or teinds. The amount of stipends yearly depends on the average market value of corn, the averages being called *fiars*, which are struck annually by a jury in every county. Each minister being entitled to a certain quantity of grain, the value of the quantity, according to the fiars, is paid in money. If the teinds in the hands of the heritors be not all uplifted, the stipend is liable to be increased at the end of every twenty years. In 1848, the gross amount of teinds paid to the clergy annually was £148,000, and the amount left unappropriated in the hands of private individuals was £136,000. It is not stated by any authority we have consulted what unappropriated teinds are in the hands of the crown; but it appears that there are bishops' teinds (formerly revenues of bishops), amounting to £15,741 annually, of which a portion is drawn by the crown, and £10,182 unappropriated. The total income of the church, including value of glebes and manses, is calculated at £274,620, being on an average of £256 each. In some parishes the exigible stipend is so small, that it is made up to a minimum of £150 by government. Among the largest stipends are those paid to the eighteen parish ministers of Edinburgh, who receive about £500 each, levied by a peculiar law as a money-tax from the inhabitants. The expense incurred for building and maintaining the fabrics of the churches and manses, is defrayed by the heritors along with the stipends.

In Scotland no secular days, such as Christmas and Good Friday, are legally set apart as holidays, the Scottish Church recognising no saints' days or holidays whatsoever. But in each parish there are one or two fast days in the year, held on the week preceding the celebration of the communion.

Scotland abounds in dissenters, the bulk of whom are only separatists from the church, and under various names, possess the same doctrines and formula. Besides these dissenters, there is a considerable body of Protestant Episcopalians, in communion with the Church of England; also Roman Catholics and Independents. The number of congregations belonging to the established church, and various dissenting bodies, may be summed up as follows:—Established Church, 1235; Free Church, 714; United Associate Synod, or Secession Church, and other Presbyterians, 648; Independents, 141; Episcopalians, 110; other Protestant sects, 47; Roman Catholics, 77.

EDUCATION.

In England, the chief institutions for education are—the ancient national universities of Oxford and Cambridge; the more recent colleges of London, Durham, and Lampeter in Wales; the classical schools of Eton, Westminster, Winchester, Harrow, Charterhouse, and Rugby; the military college of Sandhurst; and the East India Company's seminaries at Haileybury and Addiscombe; the colleges of the dissenting denominations; and the elementary schools of the National and British and Foreign Societies. Beyond the above-named schools, everything elementary is left entirely to private exertion or individual beneficence; and to this may be attributed the fact, that the number of scholars is as 1 to 11½ of the population, while in Prussia, for example, it is as 1 to 6. Some Schools of Design, recently established, the British and other museums, certain learned societies, and a number of mechanics' and other similar institutions, complete the educational machinery of the country. England is thus almost the only country in Europe in which there is no public or general system of elementary education—religious sectarian differences having as yet frustrated every scheme towards the establishment of so desirable an object.

Though government has not been able to organise any system of national education, 'it has,' says Mr M'Culloch, 'within the last few years adopted a plan by which it has done a good deal to promote instruction, without exciting the opposition that would have been called forth by its direct interference with existing systems. Parliament votes annually a sum for the promotion of education, the disposal of which is vested in the Committee of Council for Education. Hitherto (1847) the grants have been principally disposed of in advances towards the erecting of school-houses; but latterly, also, contributions have been made to the erection of houses for the masters, and for the purchase of books and other school machinery. The grants to schools are at the rate of £1 per head for every child in attendance, whether the school be for infants or for more advanced pupils. The principal condition annexed to a grant is, that the school so assisted shall be open to the visits and examinations of a government inspector.' The grants to the Committee of Council have been as follows:—From 1839 to 1842 at the rate of £30,000 per annum; from 1843 to 1844, £40,000; in 1845, £75,000; and in 1846, £100,000. To be fully effectual—that is, to meet the wants of the country, so that every one might enjoy at least the elements of an ordinary school tuition—the grant would require to be trebled or quadrupled; but even this is not desirable unless under a uniform and non-sectarian system.

In a country where there exists no national system, it is impossible of course to obtain anything like accurate statistics regarding the number of pupils, the sums expended, the curriculum or methods of tuition followed, or, in fact, anything that appertains to the elucidation of the all-important subject of education. Matters cannot, however, long continue in this state; and already we perceive in the existing parliamentary grants, in the discussions which have followed, in the establishment of school associations, and the like, symptoms of a better and brighter era.

Ireland possesses three collegiate establishments, in which the higher departments of science and literature are taught—namely, Trinity College, Dublin; the Roman Catholic College of Maynooth; and the Academical Institution in Belfast. Under a recent act of Parliament, four additional colleges are about to be erected, unrestricted by religious tests, and open to students of every denomination. Besides these there are several minor Catholic colleges, and the public classical or grammar-schools of the larger towns. Elementary education has in recent times made great

advances in this part of the United Kingdom, so that the number of pupils receiving such instruction is now estimated at 1 to 10 of the population.

In 1831, there was established by act of Parliament a national system of education, the main feature of which is an arrangement by which the children are separated at certain times, and taught religion by their respective pastors—the necessary funds being provided by the state. By this means it was hoped that the great body of the people, and more particularly the children of the poorer class of Catholics, would at length be brought within the pale of education. We need not say how differently the plan has been regarded by various parties, both in Ireland and in Britain. The national board consists of nine commissioners chosen from both the Roman Catholic and Protestant bodies—the Roman Catholic and Protestant archbishops of Dublin being among the number. The commissioners in 1840 received £50,000 from the public purse; their estimate was £50,357, which they proposed to lay out as follows:—On training of teachers, £2220; model schools, £390; grants towards building and establishing new schools, £12,000; salaries and gratuities to teachers, £23,000; infant schools, £220; agricultural schools, £150; inspection, £4975; books and school requisites, £4250; and general expenditure, £3152. The fee paid by each scholar is 1d. per week. In March 1838, the number of national schools was 1384, attended by 169,548 children; but 195 new schools were soon to be opened, and it was expected that they would be attended by 40,106 pupils, making a total of 209,654. Reckoning, however, the schools said to be in actual operation in March 1838, there were then upwards of 169,000 children receiving a regular elementary education at an annual cost to the state of £50,000. Since that period the grant has been increased; and in 1845 there were 3426 schools, and 432,844 pupils, at a cost of £85,000.

Besides this great national system of elementary instruction, the country possesses several religious or charitable associations for promoting education among the poorer classes: of these the principal are the Kildare Place Society, which lately supported 1097 schools, attended by 81,178 scholars; the Church Education Society, which in 1845 had 1811 schools and 100,755 pupils; and the Sunday School Society, formed in 1809 for the religious instruction of children unable to attend schools on week days. The Roman Catholic body also supports a considerable number of schools.

Scotland possesses five colleges or universities for the higher branches of instruction, being those of Glasgow, St Andrews, King's College and Mareschal College Aberdeen, and Edinburgh. Education at these institutions is generally conferred on a more liberal and less expensive scale than at the universities of England. Besides these universities there are the recent and minor colleges connected with the Episcopalian, Free Church, and Catholic bodies. Scotland has been long distinguished for its parochial institutions for elementary instruction, and also for its grammar-schools or academies in the chief towns, which serve as preparatory gymnasia for the universities. Each parish (some parishes in towns excepted) is provided with a school at the expense of certain landowners or heritors, in virtue of an act of Parliament passed in 1696, re-establishing statutes formerly in existence. Another act was passed (43 Geo. III. c. 54) in 1803, amending existing provisions on the subject, and ordaining 'that the salary of each parochial schoolmaster shall not be under £16, 13s. 4d., nor above £22, 4s. 5½d.,' except in particular cases mentioned; and provision is further made for augmenting this minimum and maximum at the end of every twenty-five years. An increase accordingly took place in 1828, raising the minimum to £25, 13s. 3⅔d., and the maximum to £34, 4s. 4½d. These payments are made according to the liberality of the heritors; and they besides must provide a small house for the schoolmaster, with a garden, as well as school-house. The teacher is entitled to take small fees in addition; the more common fee is 2s. or 2s. 3d. per quarter for instruction in reading, with 6d. for writing. Altogether, this class of men are slenderly remunerated for their extremely valuable services. Within the last thirty years, the parish schools have been almost superseded in some quarters by the establishment of voluntarily supported institutions, such as those of the Dissenting and Free Churches, Subscription Academies, and the like; they have also been supplemented by various munificent endowments from private individuals, and recently by the proffer of aid from the Committee of Council on Education.

In a report to Parliament in 1834, the number of schools in Scotland was stated as follows:—Parochial schools, 1047; pupils attending them, 68,298; total emoluments of teachers, £53,339. Voluntarily supported schools, 3995; pupils attending them, 154,160. It appears from this that there were 222,458 children receiving instruction (not including the attendance at Sunday schools), and that of these only 68,298, or little more than one-fourth, were educated at the parochial schools. There were 5042 schools, and of these only 1047, or about one-fifth, were parochial establishments. The publication of this report caused considerable surprise, for it was generally believed that the great bulk of the juvenile population were instructed in the parish schools. The total emoluments of the parish teachers are stated at £53,339, or on an average, nearly £51 each; but of this sum only £29,642 is stated as salary, there being collected in school fees, £20,717, and from other sources, £4975. The average annual expense of educating each child at the parochial schools, on the above data, appears to be 15s. 7¼d. A great difference was found between the attendance of males and females. Taking the entire attendance on schools, there were 132,489 males, and 89,964 females. The result of the inquiry seems to be, that about 1 in 9 of the population in Scotland attends school.

The generally imperfect instruction among the humbler orders of society in all parts of the United Kingdom, is strikingly manifested in the returns of criminal commitments. On this interesting topic we extract the following results of an inquiry instituted with respect to education and crime, and lately embodied in a pamphlet read before the Statistical Society of London, by Rawson W. Rawson, Esq.:—

'1*st*, That only 10 in 100 of the criminal offenders committed for trial in England and Wales are able to read and write well, and of these only 4 in 1000 have received such an amount of instruction as may be entitled to the name of education, and that these proportions are greatly below the average standard of instruction among the general population.

2*d*, That these proportions are considerably higher in Scotland, and lower in Ireland; and the evidence appears to establish that the degree of instruction possessed by criminal offenders is an indication of that possessed by the general population in the same districts.

3*d*, That about one-third of the adult male population of England cannot sign their own names, and that from one-fifth to one-fourth can neither read nor write.

4*th*, That these proportions are much more favourable than in France or Belgium, where one-half of the youths at eighteen could neither read nor write. The proportion of wholly ignorant criminals in those countries is correspondingly greater than in England.

5*th*, That in England, instruction is twice as prevalent among male as among female criminals, and one-half more prevalent among males in the general population than among females. That in Scotland and Ireland school instruction is three times as prevalent among the male criminals.

6*th*, That this unfavourable condition of females in these two countries is further confirmed by the fact, that the proportion of female to male criminals is greater than in England; and it may be traced to the circumstance of the number of girls at school in those two countries being very small in comparison with the number at school in England. In comparing the three

countries, the number of female criminals is found to be exactly in the inverse ratio to the proportion of females attending school.

7th, That education has a greater influence among females than among males in restraining them from the commission of crime.

8th, That instruction prevails, upon an average, to a greater extent among the agricultural than among the manufacturing counties of England; but that the agricultural counties in the east, east-midland, and south-east, are greatly below the average.'

Since the above results were deduced, a new and gratifying feature of the age has appeared in the establishment, in many of our more populous towns, of what are termed Industrial Schools. These humble institutions are intended solely for those neglected and destitute children who would otherwise be uncared for, and allowed to grow up in ignorance, beggary, and crime. Already much good has been done by these schools, in which the children receive certain meals, clothing, elementary instruction, and are trained to industrial habits. As yet they have depended on private subscription; but a more legitimate object for government support could not well be imagined.

FINANCES.

Revenue.—The revenue of the British Empire has varied exceedingly of late years; from 1761 to 1774, which was a period of peace, it increased from £8,800,000 to £10,285,678; and since that time, from the various wars in which the country was engaged, the immediate expenses, and the interest of public debts, it has continued to augment till within these last ten or twelve years. From 1775 to 1783, which was the period of the American war, it rose from £10,000,000 to £12,000,000; and during the peace which followed till 1793, it was increased to £17,500,000 a year.

After this period the French revolutionary war commenced. That war was by no means unpopular with the nation; and it was besides gilded by the many splendid victories which continued to be obtained by British seamen as long as the enemy had a fleet to appear at sea. Heavy taxes for defraying the expenses of this war were therefore submitted to without remonstrance, and the public revenue rose accordingly to a very large amount. From 1794 to the peace of Amiens in 1801, which only lasted two years, the revenue was increased from £17,500,000 to £28,000,000; and from 1803 till 1816, the year after the final conclusion of peace, it had risen to £76,834,494, which was the largest sum raised by taxes in one year.

The sums thus raised in taxes, large as they were, did not, however, meet the expenditure of the country during these periods of war. In order to defray the great charges which arose, it became necessary also to borrow to a great amount. The following table will show the sums raised by the taxes, the sums borrowed, and the total expenditure for each of the years specified:—

Year.	Raised in Taxes.	Borrowed.	Total Expend.
1794	£17,674,395	£5,079,971	£22,754,366
1801	28,065,829	33,532,159	61,617,988
1803	38,401,738	23,972,742	62,373,480
1806	53,698,124	22,358,672	76,056,796
1810	66,029,349	22,763,202	88,792,551
1814	70,926,215	52,309,445	122,235,660
1816	76,834,494	54,471,464	130,305,958

These sums will appear altogether enormous, and must give the most extraordinary idea of the resources of a government, which, while it raised such a large yearly amount in taxes, had yet credit to borrow the immense additional sums which were wanted. The whole sum which was expended in the wars of the Revolution, from 1794 to 1816, amounted to £1,700,000,000 sterling—a sum so far beyond all ordinary dealings, that we can have little conception of its amount or value.

The debt formed by borrowing money at different rates of interest to conduct the warlike operations of the country, has risen from small beginnings towards the conclusion of the seventeenth century, to an unparalleled amount. At the revolution of 1688, the national debt amounted to only £664,263; at the accession of Queen Anne, £16,394,702; of George I., £54,145,863; of George II., £52,092,285; at the end of the Spanish war in 1748, £78,293,313; at the commencement of war in 1755, £74,571,840; at conclusion of peace in 1762, £146,682,844; at commencement of American war in 1776, £135,943,051; at conclusion of peace in 1783, £238,484,870; at commencement of French revolutionary war, £238,733,609; at peace of Amiens in 1801, £582,939,277; at peace of (Feb. 1) 1816, £864,822,461; on the 5th of January 1848 it was £772,401,851, with an interest of £27,753,668. At the same period the amount of outstanding Exchequer bills was £17,974,500, which raised the sum-total of the national debt to *seven hundred and ninety millions*, and the total interest to £28,141,531! The annual cost of management of the national debt is £91,398.

The revenue which it is necessary to raise for the purpose of paying the interest of the debt, and conducting the business of the country, is derived from taxation upon a great variety of different articles, which are all, however, reduced to the following heads:—

1. *The Customs.*—These are taxes levied upon the foreign commerce of the country, being the duties paid upon articles imported from abroad, such as tea, sugar, coffee, spirits, wines, tobacco, &c. They include also a few on some goods exported, such as coals, wool, and skins. Their whole amount in the year ending January 5, 1848, was £20,024,431.

2. *The Excise.*—The Excise taxes are those which are levied on goods of British manufacture, such as glass, malt, paper, &c. The duty is paid back again to the maker if the commodity is to be exported to foreign countries. This class of taxes yielded, in the above year, £12,883,677.

3. *Stamp Duties.*—These consist of the prices affixed to stamped papers, upon which the law makes it imperative that every document for the transfer of property, or other obligation, shall be written. Deeds, settlements, and bills, bills of exchange, receipts (above a certain small amount), and a great variety of other instruments of business, are required to be stamped in this manner: and the prices affixed to the stamps, which are often high, bring a large revenue. Under the head of stamps are also included newspaper stamps, indentures, dice, duties on plate, and other anomalous items. The whole amounted in the above year to £7,527,543.

4. *Assessed Taxes.*—These are duties levied on land, on windows (eight or upwards), male servants, riding-horses, dogs, use of armorial bearings, hair powder, &c. This class of taxes, which are levied by surveyors and collectors, amounted in the above year to £4,334,561. The principal items are the land and window taxes, each of which was above £1,000,000.

5. *Income and Property Tax.*—A tax on property and incomes beyond a certain annual amount has been occasionally resorted to in time of war, or during extraordinary financial depressions. A burden of this kind was imposed in 1841; then as a temporary expedient, but the state of the country has since rendered its continuance necessary. It is at the rate of 7d. per pound on property, and on all incomes exceeding £150 per annum, allowance being made for certain kinds of loss and outlay. The revenue drawn from this source in 1848 amounted to £5,450,800. In 1847 it was £5,593,109; and in 1846, £5,603,443.

6. *Post-Office.*—In the year ending October 1839, the revenue derived from the tax on letters passing through the post-office was £2,390,764. But by the reduction of postage to one penny per letter (if under half an ounce) at the beginning of 1840, the amount of revenue derived from this source in the year ending January 1840, was only £441,000; and in 1848, £923,000. The great advantage derived by the country from cheap postage more than compensates the deficiency.

7. The income derived from rentals of *crown property*, and the sale of timber, bark, &c. from the crown lands

(with other incidents), yielded a revenue in the above year of £77,000.

8. *Miscellaneous.*—These include duties on hackney-coaches, hawkers' licenses, offices, pensions, fees, and goods seized for taxes, together with a number of other casual receipts. Their amount in 1848 was £119,788.

9. The above sources are those from which the ordinary revenue is received; but in addition to these there are imprest and other moneys, money received from the East India Company, unclaimed dividends, &c.—all of which in 1848 amounted to £205,462.

The total of the income for the year ending 5th January 1848 was thus £51,546,264; and it will be observed that of that sum fully £32,000,000 were raised from customs and excise, or duties on foreign and British manufactures, and above £7,000,000 on stamps. Thus the great bulk of taxation is indirect, and the really direct taxes are small in comparison. The chief burden of the taxes evidently falls on the consumers of tea, coffee, sugar, tobacco, soap, spirits, and wines, and these consumers are the great body of the people. Considerable reductions have been recently effected, however; and the evident tendency of the times is to direct rather than to indirect taxation. Since 1831, not only have numerous duties been reduced and modified, but those of an unproductive nature have been swept from the tariff; while those on corn have been rendered merely nominal.

Expenditure.—The gross annual revenue of the kingdom in 1848 was £57,795,249, which, after deduction of outstanding balance, charge of collection, &c. left a nett income, as above-mentioned, of between £51,000,000 and £52,000,000: let us now see how this large sum is expended. The first great item of expenditure is in the form of interest on the national debt, amounting to £28,141,531; the navy, £8,013,873; the army, £7,540,405; the ordnance, £2,947,869; miscellaneous services charged on annual grants of Parliament, such as objects of science, museums, education, surveys, Parliamentary commissions, public buildings, printing and stationery, &c. &c. £3,561,067; courts of justice, £1,046,594; annuities and pensions charged on the consolidated fund, £529,804; other salaries and allowances, £432,157; miscellaneous charges, £310,976; on account of Irish distress, £1,525,000; civil list, £393,983. With respect to this last sum, which is the expense incurred for the personal support of the sovereign and royal family and household, we may remark that it forms but a small item in the general expenditure of the nation. Formerly, the crown possessed private revenues from lands, duties, &c. but all such are now abandoned to the country (chiefly under management of the Board of Woods and Forests), and the sovereign, in requital, is voted a civil list, or certain fixed sums, by vote of Parliament.

The total expenditure thus amounts to £59,230,413—making an excess of expenditure over the income of £2,956,683. To meet this excess, either new taxes must be imposed, and new loans contracted, or a corresponding reduction must be made in the national outlay; and it is now to the latter alternative that the attention of the public is being directed. That the expenditure of nations, as well as that of individuals, should never exceed their incomes, is just and prudent; where an opposite course is pursued, it is sure to lead to embarrassment and dishonour in the long-run.

THE ARMY AND NAVY.

The Army.—According to the terms of the constitution, a permanent or standing army is not held to be legal. It is understood that the civil power, as exerted by magistrates, constables, and police, is competent to preserve order, and that the creation of a military force is only a matter of temporary necessity. An army, however, being constantly required both to assist the civil authority, and to protect the foreign possessions of the empire, an act of Parliament, called the Mutiny Act, is passed annually, to maintain a large body of troops in regular service. Whether from this provision in the constitution or otherwise, it happens that education in military tactics is conducted on a very limited scale: the privates in the army are enlisted by small bounties from the lowest classes of the community, and very rarely, if ever, are promoted to the rank of commissioned officers. The commissioned officers, in general, belong to the aristocracy or landed gentry, and in most instances purchase their commission according to a scale of prices. Although both privates and officers are alike ill-prepared, by previous instruction, for performing the duties of their profession, such are the effects of discipline, the excellence of equipment, and other advantages, but, above all, a high tone of honour and spirit of valour, that the British army is found able to compete with forces recruited under far more favourable circumstances. It is composed of infantry and cavalry, variously accoutred according to the part they have to perform in the field.

In 1848, the army (infantry and cavalry) consisted of 122,812 rank and file, 9962 non-commissioned officers, and 5995 officers. Number of horses, 11,000. The annual estimate for this branch of our forces is at present £6,318,686. To this account there is to be added what is called the civil department of the army, or the army management, consisting of the salary of the secretary-at-war and his office, the commander-in-chief and his office, the medical departments, &c. By an act passed in the reign of George IV., a sum of £60,000 is paid into the Exchequer by the East India Company, on account of the charge for retiring pay and pensions, and other expenses of that nature, arising in respect of the forces serving in India. This sum is applied towards the general expenses of the state. The pay of a private in the Horse Guards varies from 1s. 9½d. to 2s. 0½d. per day; in the cavalry of the line, 1s. 4d.; in the Foot Guards, 1s. 2d.; and in the infantry of the line, 1s. 1d. When at home and in barracks, 6d. a day is deducted from this, for which the soldier receives three-quarters of a pound of meat and one pound of bread. The principal part of his clothes and accoutrements is furnished at the public expense; his pay, however, is subject to a deduction of 2s. 7½d. a week, in the case of privates serving in the cavalry; 1s. 1d. a week from privates in the Foot Guards; and 1s. 6d. from all other privates, on account of these articles.

Besides the cavalry and foot regiments, there is another description of force called the Ordnance, which includes artillery, engineers, miners, &c. They have the management of fortifications, with their guns, stores, &c. the making of rockets, and different kinds of shot for great guns. The numerical force of this branch of the service amounts to 14,294 men and officers. These, with equipments, cost upwards of £3,000,000 annually. Of the British army, 113,847 are employed at home and in the colonies, and 24,922 in the East Indies. The troops at home are chiefly lodged in barracks, as a police, near the large towns.

The statements which we have made above relate entirely to the effective force of the army, which is either on active duty or ready to be so employed. But there are a great number of persons attached to the army who do no duty, though receiving pay like others. Some of these are pensioners, who have either been long in service, or have suffered by wounds, &c.

The Navy.—Great Britain has long been renowned as a first-rate naval power: by command of its war vessels it protects its commerce, and exerts its authority in the most remote quarters of the globe. It is usual to say that Britain possesses the 'dominion of the seas;' but this is only a figure of speech. The nation possesses no acquired or vested sovereignty over the ocean, acknowledged by other powers, although at times it may forcibly compel submission. The British royal navy is recruited in much the same manner as the army; but the constitution, by a singular anomaly, sanctions the forcible abduction of men from their private homes to serve on board of war vessels. This species of impressment, however, is only resorted to in cases of urgent necessity; as, for instance, during the

heat of war. The sailors who enlist are generally young men who have served an apprenticeship on board merchant vessels; and with this preparation, they form seamen of the highest qualifications; their courage, integrity, and kind-heartedness, are a lasting theme of national gratulation. At present the total force of the navy amounts to 43,000 men; of whom seamen 27,500, boys 2000, marines afloat 5500, marines ashore 8000. To these are to be added about 900 employed officers. The average pay of a sailor is £1, 14s. per month, with victuals, which are estimated at about £1, 4s. additional. Much complaint is made of the high salaries paid to people about the dockyards; the master-workmen receiving £250 per annum, and the artificers from 5s. to 12s. 6d. per day. During the war with France, Great Britain had upwards of 1000 ships, manned by 184,000 seamen.

In November 1848, the royal navy consisted of 673 vessels, of which the following were *in commission*:—19 first-rates, of from 120 to 100 guns each, mounting 2216 guns; 76 second and third-rates, of from 104 to 70 guns each, mounting 6196 guns; 126 fourth, fifth, and sixth-rates, of from 65 to 18 guns each, mounting 1873 guns; 79 sloops, of from 18 to 8 guns each, mounting 986 guns; 16 brigs, of from 8 to 3 guns each, mounting 78 guns. Steamers—22 ships and frigates, with an aggregate power of 12,222 horses, and mounting 281 guns; 42 sloops, of an aggregate power of 13,300 horses, and mounting 251 guns; 38 gun-vessels, of an aggregate power of 6748 horses, and mounting 125 guns; 2 screw-schooners, whose joint power is 120 horses, and mounting 20 guns; steam-guardships, classed as fourth-rates, 3800 horse-power. Grand total, 420 vessels, mounting 15,026 guns. Of this force 104 are steam-vessels, propelled by engines of an aggregate power of 36,180 horses. This return does not include the mail flotilla of Dover, Holyhead, Liverpool, other stations, &c. Ships *in ordinary* are vessels which are dismantled, and put aside in a harbour, with only a few persons on board to take care of them. A ship in service, or even thus taken care of, will waste and rot, it is said, in fourteen or sixteen years; but a plan has lately been devised by which those not in service may be hauled up out of the water, and placed under cover, which it is expected will make them last much longer.

The cost of vessels of war in building is from about £40,000 to £110,000, according to dimensions. An 80-gun ship costs for hull £54,900, for rigging and stores £16,005—total, £70,905. A ship of this size, with a complement of 750 men, costs per annum, for pay of officers and wages of seamen, £19,812; for provisions, £13,325; for rigging and stores, £3201; for wear and tear of hull, £3660—total, £39,998. This is exclusive of charge for ordnance and marines. The naval estimates for the year 1849 were £7,951,842. Dividing this sum by 252, the number of ships and vessels in commission, it appears that the average cost per annum of each vessel is £31,554. These particulars are mentioned, in order that the people may have a proper notion of the expenses at which naval armaments are maintained.

There are six marine arsenals or dockyards—Deptford, Woolwich, Chatham, Sheerness, Portsmouth, and Plymouth. The principal foreign stations for the navy are Gibraltar and Malta in the Mediterranean; Halifax and Quebec in North America; Jamaica and Antigua in the West Indies; and Trincomalee and Bombay in the East Indies.

AGRICULTURE—MANUFACTURES—COMMERCE.

In consequence of the industry exerted in Britain for several centuries, the greater part of the soil is now in a high state of cultivation and fertility; roads, railways, and canals, for carriage and communication, are everywhere formed; substantial farmsteads, villages, and large and populous towns, stud the surface; harbours, docks, factories, foundries, and other useful erections, unequalled in number and extent, form a chief feature of the country; and manufactured products of every description are produced in astonishing quantities—thus conferring not only upon the inhabitants, but upon the people of other countries, an amount of comforts and luxuries hitherto unknown.

Out of a total of 77,000,000 of acres in the British islands, 47,000,000 are cultivated, 15,000,000 uncultivated, and 16,000,000 incapable of cultivation, according to our present notions of agriculture. The value of the cultivated soil has been estimated at about £1,700,000,000; of mines, at £120,000,000; of roads, canals, and other means of communication, at £130,000,000; of dwellings, factories, and kindred erections, at £540,000,000; of annual agricultural produce and implements, at £224,000,000; of horses, cattle, sheep, and other live-stock, at £242,000,000; of manufactured goods, at £190,000,000; of mercantile shipping, at £35,000,000; of foreign merchandise paid for, at £53,000,000; and of fisheries, foreign and domestic, at £5,000,000; being *a total of productive property amounting to more than £3,000,000,000!* Besides this enormous sum, it is supposed that the nation possesses, of unproductive property, including waste lands, household furniture, apparel, ornamental articles, coin, &c. £580,000,000; and of public property, as churches, hospitals, prisons, arsenals, forts, military stores, dockyards, ships of war, &c. £105,000,000; being a grand total of £4,124,000,000!

The large amount of useful and agreeable things represented by this sum, and which afford subsistence and comfort to more than 27,000,000 of people, are, let it be carefully observed, the *results of labour*; in other words, the difference between the country in its primitive state, and the condition which it has attained after nearly 2000 years of well-directed ingenuity and toil. Against this sum, however, must be placed the National Debt, amounting to more than £790,000,000. This debt is no doubt owing to individuals within the nation, and who spend the interest arising from it in the country; but it does not the less on that account represent a portion of the results of industry bestowed in such a manner as to produce no return.

The people engaged in *agriculture* and other rural employments are necessarily spread over the whole of the cultivated parts of the country. Of these, the farmers or leasers of the ground are in general much superior in wealth and style of living to the farmers of any other country in the world; being generally, to a certain extent, capitalists, who employ labourers to perform the actual business of rural economy. The annual value of the produce raised in England—namely, crops, gardens, grass, and woodlands—is estimated at £141,000,000; in Scotland, at £28,000,000; and in Ireland, at £217,000,000.

In manufactures and commerce, Britain has long enjoyed a superiority over all other countries. For this the nation has been indebted not only to their naturally industrious dispositions, and the enlightened men who have in the course of time invented machinery for increasing and cheapening the products of labour, but, as already stated, to the extraordinary abundance of mineral substances requisite for manufactures, and to the insular nature of the country, which admits of ready maritime communication with other regions. In consequence of these advantages combined, Britain has for a long time furnished articles of clothing and household conveniency to many parts of the world, receiving in exchange either money or raw produce which its own soil and climate do not permit of being grown.

The *cotton* manufacture, notwithstanding that the raw material can be obtained only in distant parts of the earth (America, the East Indies, and Egypt), has risen in Great Britain, during seventy years, from about £200,000 of annual produce, to the enormous sum of £36,000,000, of which about two-thirds is exported. Cotton goods are manufactured chiefly by means of machinery, in large factories, of which, in 1839, there were 1603 in England and Wales, 192 in Scotland, and 24 in Ireland; the chief seats of the manufacture being Manchester, Glasgow, and Paisley.

These factories gave employment in the same year to 259,000 persons, of whom upwards of 12,000 were below thirteen years of age. Cotton goods are also manufactured by handloom weavers, of whom a considerable number continue to strive against the overpowering competition of machinery.

The *woollen* manufacture, which is the oldest in Britain, was carried on in 1839 by 36,411 persons, in 1738 factories, of which 1595 were in England and Wales, 112 in Scotland, and 31 in Ireland—jointly realizing an annual value of about £25,000,000. This amount includes of course all sorts of woollen and worsted stuffs—as broadcloths, tweeds, blanketings, flannels, carpets, hosiery—in fine, all articles into which wool enters as the principal ingredient. Of such goods not less than £8,250,000 sterling are now annually exported from Britain. The woollen manufacture, particularly the finer kinds, is chiefly carried on in the west and north of England; both fine and coarse fabrics are now made at Galashiels in Scotland; and Kilmarnock and Stirling drive a thriving trade in carpets, bonnets, &c. In the finest kind of broadcloths, the Prussians are said still to excel the English.

The *linen* manufacture has also been long prosecuted, especially in England and Scotland; but until of late years its progress has been inconsiderable, compared with that of our other manufactures. No very accurate statistics of the trade can be obtained, in consequence of hand-power being employed to a large extent both in the spinning and weaving of the material. In 1839 there were 169 flax factories in operation in England, 183 in Scotland, and 41 in Ireland—employing respectively 16,000, 18,000, and 9000 hands. According to Mr M'Culloch, the entire value of the linen manufacture of the United Kingdom in 1847 did not exceed £10,000,000.

The *silk* manufacture, introduced by French immigrants in the sixteenth century, is carried on to a great extent at Spitalfields, Coventry, Manchester, Paisley, and Glasgow. Silk enters into so many articles, either whole or as a component part, and is so widely spread over the kingdom, that any estimate formed of the value of the manufacture must be regarded merely as an approximation. Standard authorities estimate the annual value at upwards of £10,000,000—about one-tenth of which is exported. There were, in 1846, 150 mills, employing about 35,000 persons of all ages.

The *hardware* manufacture is one in which the metallic and mineral wealth of the country, combined with the skill of British workmen, have long given us a pre-eminence over other nations. Iron to the amount of more than 1,000,000 tons was, in 1842, prepared from British mines, for the purpose of being manufactured into machinery, rails, steam-ships, domestic utensils, firearms, cutlery, and other articles of conveniency. The manufacture of the finer class of hardware is chiefly seated at Birmingham and Sheffield; machinery, ship-building and the like, at Birmingham, Manchester, Liverpool, Glasgow, and Dundee; while the principal foundries for the preparation of the crude material are in Stirlingshire, Lanarkshire, Wales, and Staffordshire. The annual value of hardware now manufactured in Britain is estimated at £18,000,000, giving employment to 300,000 hands. This is exclusive of watches, plate, articles of jewellery, &c. which are valued by Mr Jacobs at somewhere about £3,000,000.

The miscellaneous manufactures of the country are so numerous and complicated, that it is impossible to form anything like a correct estimate of their respective values. *Leather* goods, for example, have been set down at an annual value of £16,000,000; *earthenware* and *china* at £2,500,000; *paper* at £2,000,000; and similar valuations have been put upon glass, soap, malt liquors, &c.; but all such estimates must be regarded as mere approximations. 'It is to be regretted,' says Mr M'Culloch, 'that there are no means of forming any estimate of the real value of the manufactured articles annually produced in Great Britain and Ireland. But the previous statements show that it must be very great. There are, in fact, but few departments in which we are able to obtain a tolerably close approximation to the gross value of the articles produced; and even though we could do this in them all, the results would not be of so much value as is commonly supposed, and might indeed, unless subjected to further examination and analysis, lead to the most erroneous conclusions. It is supposed by many, that whatever may be the annual value of our manufactured goods, we shall, by adding it to the annual value of our agricultural products, get the total value of the new commodities annually produced in the empire. But this is an error. The value of the British wool, for example, employed in the woollen manufacture, may amount to from £5,000,000 to £5,500,000 a year, and forms an item of this amount in estimating the value of the manufacture. It is plain, however, that if we include this wool in any estimate of the agricultural produce of the country, we must exclude it from that of its manufactured produce; for if we do not, it will be reckoned twice over. The same thing happens in a vast variety of cases. Hence the extreme difficulty of forming any fair estimate of the real value of many species of manufactures.'

The commerce of Britain is conducted by vessels belonging to private parties within the realm, or in other countries. In 1845, the mercantile navy of the home country and its colonies consisted of nearly 32,000 vessels, of more than 3,500,000 of aggregate tonnage. We obtain, however, a more distinct idea of the extent of the national commerce from a calculation of the number of vessels, British and foreign, which in 1845 entered and departed from British harbours. These were—of British, 21,000; of foreign, 11,600, comprehending an aggregate of above 6,000,000 of tonnage. The chief mercantile port of Britain is London, after which Liverpool, Dublin, Bristol, Leith, Hull, Glasgow, Newcastle, Greenock, and Belfast, rank in succession. Duties exceeding £11,000,000 are annually paid to government for goods imported into London; and harbour dues to the amount of £150,000 were collected in 1830 for vessels in the docks at Liverpool.

The following table exhibits the Quantities of the Principal Articles of Foreign and Colonial Merchandise entered for Consumption in the years ending January 5, 1847 and 1848:—

		1847.	1848.
Live Cattle,	*No.*	49,592	75,338
Sheep,	*No.*	94,567	139,576
Beef,	*cwt.*	176,599	117,601
Butter,	*cwt.*	265,139	215,984
Cheese,	*cwt.*	327,490	365,503
Cocoa,	*lbs.*	2,962,327	3,107,164
Coffee,	*lbs.*	36,781,391	37,470,579
Corn: Wheat,	*qrs.*	1,905,852	...
Wheat-flour,	*cwt.*	3,384,434	...
Barley,	*qrs.*	400,443	...
Oats,	*qrs.*	772,554	...
Cotton-wool,	*cwt.*	4,176,327	4,227,929
Flax and Hemp,	*cwt.*	1,146,743	1,049,541
Fruit: Raisins,	*cwt.*	238,647	212,545
Currants,	*cwt.*	329,315	331,440
Oranges,	*chests*	334,629	330,082
Hides,	*cwt.*	415,815	...
Linseed,	*qrs.*	502,830	433,536
Oil: Whale,	*tuns*	16,657	22,616
Palm,	*cwt.*	367,054	476,401
Olive,	*tuns*	6,532	9,628
Pepper,	*lbs.*	3,227,421	2,866,808
Rice,	*cwt.*	446,961	...
Saltpetre,	*cwt.*	489,095	512,373
Silk, raw, &c.	*lbs.*	5,717,353	...
Spirits: Rum,	*gals.*	2,683,515	3,329,940
Brandy,	*gals.*	1,518,954	1,537,762
Sugar: Colonial,	*cwt.*	3,185,846	3,632,675
East India,	*cwt.*	1,443,231	1,183,563
Foreign,	*cwt.*	602,771	975,545
Molasses,	*cwt.*	582,665	638,623
Tallow,	*cwt.*	1,128,429	1,072,307
Tea,	*lbs.*	46,729,908	46,324,928
Timber, Colonial,	*loads*	1,218,615	1,067,301
Foreign,	*loads*	707,336	774,591
Tobacco,	*lbs.*	27,001,908	26,752,051
Wine,	*gals.*	6,973,608	6,316,536
Wool, Sheep's,	*lbs.*	65,117,688	68,130,867

Besides tea, wine, and sugar, the imports of Britain consist chiefly of raw materials for manufactures, while the exports are almost exclusively manufactured goods. The greatest quantity of imports is from America; the greatest quantity of exports to the same part of the world. Tea, to the weight of 44,000,000 lbs., is obtained from China; wine, to the amount of 6,000,000 gallons (in 1846), chiefly from Portugal and Spain; sugar, to the value of £7,000,000 sterling, is exclusively imported from the West Indies; cotton, in its raw state, is obtained chiefly from the United States. Of wool, the coarser sort is obtained at home, while the finer kinds are imported from Germany and Australia. Tallow, hemp, and timber, to the value of £4,000,000, are annually imported from Russia.

The annual exports of native produce of the United Kingdom are valued at about £60,000,000, and the re-exports (of goods previously imported) at £16,000,000—total £76,000,000. The annual imports are valued at about £75,000,000, thus leaving a balance of £1,000,000 in favour of the United Kingdom to be paid in money. This balance, however, is subject to many causes of fluctuation. Of the £60,000,000 of exports, upwards of £14,000,000 are sent to Northern Europe; £11,000,000 to Southern Europe; £1,600,000 to Africa; £11,200,000 to Asia; £7,000,000 to the United States; £5,500,000 to our North American Colonies and the West Indies; £1,200,000 to foreign West Indies; and £5,400,000 to Southern and Central America. Our best customers are the United States, taking £7,000,000; the East Indies, £7,000,000; Germany, £6,000,000; Holland, £4,000,000; British North America, £3,000,000; and the West Indies, £2,500,000. The countries ranking next in order, and receiving between £2,000,000 and £3,000,000 of our exports, are France, Italy, Turkey, China, West Indies, Brazil, and Russia. Of the produce so exported, cotton goods yield the largest value; after which woollen goods, iron and steel, hardwares, linen, brass and copper manufactures, arms and ammunition, rank in succession.

The following table exhibits the Declared Value of Principal Articles of British and Irish Produce and Manufactures, Exported in the Years ending January 5, 1847 and 1848:—

	1847.	1848.
Alkali,	£152,412	£211,830
Apothecaries' Wares,	254,923	296,408
Apparel,	758,279	712,904
Arms, Ammunition,	484,711	463,647
Beer, Ale,	381,799	403,759
Books,	174,339	200,530
Brass and Copper,	1,558,187	1,541,668
Butter, Cheese,	211,295	175,102
Coals, Culm,	967,183	968,502
Cordage,	129,726	154,990
Cotton Manufactures,	17,717,778	17,375,245
Cotton Yarn,	7,882,048	5,957,960
Earthenware,	793,166	834,357
Fish,	339,305	275,859
Glass,	262,547	291,189
Haberdashery,	874,585	1,111,625
Hardwares,	2,180,588	2,341,981
Hats,	117,778	125,813
Horses,	111,159	103,073
Iron, Steel,	4,178,026	5,265,779
Lead and Shot,	147,170	179,344
Leather, Saddlery,	432,926	465,597
Linen Manufactures,	2,830,808	2,958,851
Linen Yarn,	875,405	649,883
Machinery,	1,117,471	1,263,016
Oil, Linseed, &c.	95,740	235,148
Painters' Colours,	213,620	223,842
Plate, Jewellery,	245,330	263,037
Salt,	205,005	261,467
Silk Manufactures,	837,577	925,636
Soap, Candles,	205,099	212,134
Stationery,	276,589	305,243
Sugar, refined,	392,404	413,437
Tin Wares, &c.	767,307	643,544
Wool, Sheeps',	342,455	288,231
Woollen Manufactures,	6,335,103	6,896,036
Woollen Yarn,	908,270	1,001,364
Other Articles,	2,029,072	2,372,963
Totals,	£57,786,875	£58,971,166

Declared Value of British and Irish Produce and Manufactures, Exported in the Years 1844, 1845, and 1846:—

COUNTRIES.	1844.	1845.	1846.
	£	£	£
British America,	3,070,261	3,555,954	3,806,089
... W. Indies,	2,451,477	2,789,211	2,505,867
Jersey, Man, &c.	339,760	379,824	414,367
Gibraltar,	1,940,567	768,272	806,286
Malta,	200,009	183,065	255,032
Ionian Islands,	183,988	209,612	171,731
Cape of Good Hope,	484,151	648,749	480,979
St Helena, &c.	23,303	29,938	31,486
Mauritius,	285,580	348,089	310,231
British India,	7,095,693	6,705,778	6,449,090
Australia,	744,488	1,201,072	1,441,646
New Zealand,	47,512	43,045	53,796
	16,806,306	16,857,304	16,027,760
Russia,	2,128,936	2,155,491	1,725,142
Sweden,	109,475	183,720	168,664
Norway,	149,984	163,512	183,216
Denmark,	296,679	258,558	240,318
Prussia,	505,394	577,909	544,035
Germany,	6,151,538	6,517,796	6,606,532
Holland,	3,131,970	3,439,035	3,976,469
Belgium,	1,471,261	1,479,058	1,188,024
France,	2,656,289	2,791,238	2,715,983
Portugal,	1,153,847	900,380	969,757
... Azores,	56,839	50,938	57,146
... Madeira,	31,736	27,507	39,369
Spain,	599,207	676,636	769,787
... Canaries,	46,323	42,272	49,916
Italy, Sicily, &c.	2,569,240	2,601,911	3,391,022
Turkey and Greece,	2,319,605	2,246,855	2,128,308
Syria,	577,828	631,631	267,616
Egypt,	402,101	391,850	495,674
West Coast of Africa,	466,414	532,028	421,690
China,	2,305,617	2,394,897	1,791,439
Sumatra, Java, &c.	376,918	515,473	357,916
Philippines,	92,517	115,515	23,806
Hayti,	174,457	215,072	136,112
Cuba, &c.	999,474	1,249,015	1,308,223
United States,	7,936,079	7,149,839	6,830,460
Mexico,	494,095	547,130	303,685
New Granada, &c.	...	390,149	479,107
Brazil,	2,413,538	2,493,306	2,749,338
La Plata States,	784,564	892,279	...
Chili,	907,633	1,077,618	989,322
Peru,	652,380	876,706	890,536
Other places,	314,218	55,335	339,473
Total,	58,584,292	60,111,082	57,766,876

Account of Registered Shipping belonging to the Empire on the 5th Jan. 1846, and Ships built during the previous Year.

	Ships Registered.		Ships Built.	
	1847.		1847.	
	Tons.	Men.	Ships.	Tons.
England,	2,476,531	138,098	742	112,206
Scotland,	512,266	30,642	161	30,744
Ireland,	265,556	14,539	30	2,884
Jersey, Man, &c.	53,568	5,706	48	4,090
Colonies,	644,603	43,906	560	116,487
Totals,	3,952,524	232,890	1541	266,411

The number of *registered* Ships belonging to the British Empire on December 31, 1846, was 32,490, and 1847, 32,988.

Account of Shipping employed in the Foreign and Colonial Trade of the United Kingdom in the Year ended January 5, 1846, stated exclusively of Ships in Ballast.

Countries to which Ships belonged.	Entered Inwards.		Cleared Outwards.	
	1847.		1847.	
	Ships.	Tons.	Ships.	Tons.
British Empire,	18,771	4,238,956	18,536	3,905,794
United States,	1,303	636,394	879	518,293
Prussia,	1,351	276,563	878	158,064
Norway,	1,316	206,192	568	64,538
Denmark,	1,701	129,107	1,626	125,626
Russia,	330	80,420	166	42,600
Holland,	694	58,445	745	72,754
Belgium,	241	34,246	278	41,639
France,	856	49,693	2,428	204,813
Other States,	2,996	379,176	2,461	285,070
Totals,	29,561	6,091,052	26,564	4,719,241

Account of Shipping employed in the Coasting Trade in the Year ended January 5, 1848, stated exclusively of Ships in Ballast.

	Entered Inwards.		Cleared Outwards.	
	1847.		1847.	
	Ships.	Tons.	Ships.	Tons.
Employed between Britain and Ireland,	8,065	1,296,610	17,935	2,047,367
Other Coasting Ships,	134,440	10,923,186	140,987	11,218,258
Totals, - -	142,505	12,219,796	158,922	13,265,625

The currency or *money* of the United Kingdom is about £26,000,000 of gold and silver coin, and £32,000,000 of bank-notes, chiefly of the value of five and ten pounds—total, £58,000,000. As nearly all large payments, however, are made by bills of exchange and drafts on bankers, there is an enormously large currency of that kind. It has been calculated that the amount of bills, promissory-notes, and bankers' drafts in circulation at any one time cannot be much less than £122,000,000. The centre of all the great money transactions of the British Empire is London, in which is situated the Bank of England, or principal banking institution. The amount of foreign and inland bills of exchange and drafts payable in London daily, is estimated at £4,000,000. In Scotland, which is celebrated for its well-conducted banking institutions, the money currency is chiefly one-pound bank-notes and silver.

On the 7th of October 1848, the note circulation of the United Kingdom was as follows:—Bank of England, £17,505,718; private banks, £3,681,544; joint-stock banks, £2,666,749; Scotland, £5,136,516; Ireland, £4,506,421. The money coined in 1847 consisted of 110,400 lbs. gold, yielding £5,158,440; of 38,100 lbs. silver, yielding £125,730; and of 40 tons copper, yielding £4960.

In all parts of the United Kingdom there are now National Securities Savings' Banks, for the safe custody of small sums, the savings of labour, and for which the national credit is pledged. The amount of deposits, chiefly the property of the humbler orders of the community, is now upwards of £32,000,000, and is annually increasing. In 1845, the number of individual depositors was considerably above 1,000,000.

PUBLIC WORKS, CANALS, RAILROADS, DOCKS, &c.

Connected with our manufactures, are the great works of the civil-engineer—canals, roads, docks, bridges, piers, &c.—works which attest, more obviously than any others, the activity, power, and resources of the country. It is to the facility of internal communication afforded by these works, that the heaviest goods, though manufactured in the interior of the country, can be carried to seaports for exportation, without any burdensome addition to their price; and that materials for their different manufactures can be carried to inland towns from seaports, by canals or railroads, with the same advantage; while intelligence can be conveyed between the principal towns and seaports in the course of a few minutes, without that loss of time and opportunity which is so valuable in a highly-competitive country.

The length of the *turnpike roads* of England and Wales would, if joined together, form a continuous line of above 26,000 miles in length. The expenditure of the trustees on account of these roads, in 1841, amounted to £1,551,336; the revenue for the same year being £1,574,518: of the total expenditure, £302,182 went to defray the interest of debt, which, in 1829, amounted to £5,578,815! The length of the various *cross roads* and other highways in England and Wales is estimated at about 104,000 miles. In Scotland the aggregate length of the turnpike roads is estimated at 3700 miles; and the cross roads in tolerable repair at about 10,000 miles. Of the roads in Ireland there are no accurate statistics; but great improvements have recently been effected under the superintendence of the Board of Public Works. Since the introduction of railways, statistics in reference to the traffic and passengers on the turnpike roads are comparatively valueless unless for mere local purposes. The traffic and revenue of the chief lines are rapidly falling away, and this circumstance loudly calls for some other mode of maintenance than the expensive and obstructive exaction of toll dues.

The navigable *canals* used for the transport of goods and produce in England alone are estimated at 2200 miles in length, while the navigable rivers exceed 1800 miles—making together more than 4000 miles of inland navigation, the greater part of which has been erected or rendered available within the last eighty years. Scotland possesses about 200 miles of navigable canal; and though the physical character of the country is unfavourable to this species of inland communication, the want is less felt in consequence of the numerous firths and arms of the sea which intersect this portion of the island. The whole extent of navigable canals available in Ireland does not exceed 300 miles, and including river navigation, the entire water communication falls short of 500 miles. 'What the condition of that fertile country might become,' remarks Mr Porter, 'if its means of communication were placed upon an equal footing with those of the midland and southern counties of England, is a question of the highest interest to every one who has at heart the moral and intellectual advancement of the Irish people, and, as a consequence, the general prosperity of the United Kingdom.' In 1829 the revenue arising from the canals of England and Scotland exceeded £13,000,000, which, besides keeping them in repair, afforded an average profit to the proprietors of 5¾ per cent. on their original capital; but in consequence of the greater facilities afforded by railways, a great decline has taken place in the value of most canals. Various projects are now, indeed, on foot for converting some of the principal lines into railways, or for making them subsidiary to, or dependent on, the latter.

The *bridges*, *aqueducts*, and *tunnels*, which have been erected in connection with roads, canals, and railways, are more magnificent and numerous than those of any other country in the world. To estimate their number would be difficult; but we may mention, that, in London, the Waterloo and London Bridges alone cost very nearly £2,500,000 of money. The iron bridges which have been erected in different places, are the admiration of all foreigners. Their arches are constructed of a number of strong ribs of metal, standing apart from each other like the joists of a house, and on these the floor or roadway is formed. Bridges of suspension are now also common, in which the roadway is suspended by iron bars, from strong chains which are fixed in the earth, and then hung over high pillars at each end of the bridge; by this means bridges can be constructed over deep and broad waters, where it would have been altogether impossible to stretch an arch of any other kind. On a well-frequented road, bridges costing £14,000 or £18,000 are often constructed merely to shorten the distance by a mile or two, or to avoid an inconvenient ascent in the old track. Were it possible to estimate the amount of capital laid out on this kind of improvement alone, it would be almost incredible. (See INLAND CONVEYANCE, Vol. I.)

Railways.—From an analysis of the traffic of Great Britain, given in the report of the Commissioners of Railways to Parliament in the year ending June 1847, it appears that in that year there were conveyed by railways—47,484,134 persons; 7,000,000 tons of merchandise and goods; 8,000,000 tons of coal; 500,000 horned cattle; 1,500,000 sheep; and 100,000 horses. In the same year the average distance travelled by each person by railway was 16 miles. The gross receipts of 3207 miles of railway in the year ending June 1847 amounted to £8,326,772 (excluding Irish lines), or at the rate of £2596 per mile. The capital expended on British railways up till the end of 1848 is estimated at about £200,000,000; and when all now in course of construction are completed, it is calculated that the

gross annual revenue will exceed £15,000,000! In 1843 the revenue from 1798½ miles of railway was £4,585,189; in 1845, 2116½ miles yielded £6,209,714; and in 1847, 3207 miles produced £8,326,772—an increase which points out in the most forcible manner the energy, power, and capacity of our country. Connected with most of the lines of railway are electric telegraphs, either for conveying despatches in connection with the working of the lines, or for the purpose of public communication. The recent adoption of these adjuncts prevents anything like full or accurate statistics; but some idea of their importance may be gleaned from the fact, that any ordinary business transaction between parties in Edinburgh and London can be commenced, negotiated and completed in the brief space of a couple of hours!

Docks, Piers, and Lighthouses.—Docks are artificial basins built of stone for the reception of ships: they are of two kinds—wet and dry. A dry dock is a receptacle where vessels are built or repaired; after which the tide is admitted by flood-gates, and they are floated out to sea. Wet docks are constructed for the use of ships when loading and unloading, it being found that when they are allowed to settle down unequally on the mud or sand of rivers and harbours, their timbers are strained, and the vessels considerably damaged; in the wet docks they are kept always afloat. The sums laid out by some of the dock companies in London are immense. The capital expended by the London Dock Company in purchasing ground (chiefly the sites of houses and streets) was more than £1,000,000; and the whole cost of the works was £3,938,310.

The docks at Liverpool have an area of water of about 112 acres, and the quay space is nearly eight miles in total length. The business transacted may be conjectured from the fact, that the dues paid by vessels entering the docks in 1840 was £197,477, 18s. 6d. Few of the large seaports are without the accommodation which docks yield to commerce; those at Leith contain ten acres of water-room, and have cost £285,108. It would be idle to attempt a description or even enumeration of the immense number of piers and harbours which have been constructed at the different seaports. At every place where the profits of trade seemed to authorise such erections, capital was seldom deficient to complete them.

The *lighthouses* of Britain are perhaps the most remarkable part of the nautical apparatus of the islands. The capital expended upon them has been large, and the skill with which some of them, such as the Bell-Rock and Eddystone lighthouses, are constructed for durability in the midst of a tempestuous sea, could only have been exhibited in a country where mechanical science existed in its highest perfection; and there is hardly a dangerous or doubtful point along the coast where the mariner is not guided by a light on some headland or rock. There is, however, much complaint concerning the dues levied from ships for lighthouse expenses; some of them are held as profitable tolls by private families, and in others the money levied is applied to purposes quite unconnected with lighting.

COLONIAL POSSESSIONS.

The foreign possessions of the United Kingdom are infinitely more extensive and populous than the home country. They are about forty in number, reckoning all classes of foreign stations and possessions, and lie in every quarter of the globe. The oldest existing colonies of Britain are those of the West Indies, consisting of a number of the islands so called, the district of Honduras, or Belize, on the adjacent coast of North America, and Guiana in South America. These possessions are rich in every tropical produce, yielding sugar, coffee, tobacco, cotton, cabinet timber, spices, fruits, drugs, and dye stuffs. Jamaica, the largest and most important of these islands, has an area of more than 5000 square miles, with a population of 380,000, of which only about 38,000 are whites, the majority being negroes, most of whom were originally slave-labourers. Trinidad, St Lucia, Dominica, Barbadoes, and the other islands belonging to Britain, may contain an aggregate area of 83,000 square miles, with a population of about 460,000, of which the greater proportion are negroes and creoles. Belize is a small territory; but Guiana has an area of 67,000 square miles, with a population of more than 100,000.

Since the independence of the North American states in 1776, the British possessions in that continent lie wholly in the northern section, embracing the province of Canada, the colonies of Nova Scotia, Cape Breton, Prince Edward's Island, New Brunswick, and Newfoundland, and the vast region stretching to the Polar Ocean, at present occupied by savage tribes and the trappers of the Hudson's Bay Company. The staple products of these possessions are timber, hides, fish, furs, and flour. The population, amounting in all to somewhat more than a million and a-half, consists chiefly of British emigrants and their descendants, with a preponderance of French in Lower Canada, which was originally colonised by that people.

In the Asiatic continent, 500,000 square miles of the peninsula of Hindoostan, containing a population of 100,000,000, have, in the course of the last century and the present, fallen under the power of the association of English merchants called the East India Company, who, by virtue of a charter from the government, administer the affairs of the natives, in whose revenue they enjoy a source of vast wealth. A still larger portion of the country is under the protection, but not the direct government, of the Company. The island of Ceylon, situated at the southern promontory of Hindoostan, and containing an area of 24,450 square miles, with a population of 1,250,000, is now one of the most valuable of British possessions; it is a free colony—that is, not connected with the East India Company—and is rapidly improving. Besides these, Britain likewise possesses certain districts beyond the Ganges, as Assam, Aracan, some small settlements on the Tenasserim coast and in the Straits of Malacca. The whole of these are known by the common appellation of East Indies; and from their geographical position, yield every species of tropical produce, as sugar, coffee, tea, rice, silk, cotton, hardwoods, ivory, spices, fruits, drugs, dye stuffs, and the like. Goods to the value of more than £6,000,000 sterling are annually exported from Britain to the East Indies; while goods to the value of more than £8,000,000 are imported from the East Indies to Britain.

In Australasia, the British settlements are those of New South Wales, established in 1788; Swan River, in 1828; South Australia, in 1834; and North Australia, in 1838. The adjacent island of Van Diemen's Land (which contains 24,000 square miles, or somewhat less than Ireland), is the seat of another British colony, planted in 1824, and is altogether a thriving settlement—being more hilly and better watered than Australia. New Zealand, composed of three contiguous islands, ranging from 1100 miles in length, with a breadth varying from 5 to 200, is also the seat of a British colony planted in 1840; and if its internal management were once fairly adjusted, it would probably rise to first-rate importance. The staple products are wool, hides, hardwoods, grain, and copper.

At the Cape of Good Hope, Sierra Leone, Cape Coast, and other parts of Africa, Britain possesses upwards of 200,000 square miles, with a population of 350,000. Cape Colony, taken from the Dutch in 1806, is a thriving settlement, and may be said to be the only spot on the vast continent of Africa in which modern civilisation has been successfully planted. The Mauritius, and some minor islands in the Indian Ocean, the rocky islets of St Helena and Ascension in the Atlantic, and Fernando Po in the Gulf of Guinea, constitute the sum of British possessions connected with Africa. Their principal products are ivory, gold, hides, horns, sugar, coffee, palm oil, teakwood, aloes, &c.

The Ionian Islands, the isles of Malta and Gozzo, and the town and fortress of Gibraltar, in the Mediter-

rancan, the islet of Heligoland in the German Ocean, the peninsula of Aden on the south coast of Arabia, the islet of Hong-Kong at the mouth of the Canton river in China, the island of Labuan off the coast of Borneo, and the Falkland Islands in the South Atlantic, constitute the sum of British foreign possessions and dependencies.

All are free crown colonies except Hindoostan, which is governed by, and under tribute to, the East India Company; the Company, however, being in some measure controlled by the supreme government and the high functionaries whom it appoints. With the religion and law of England have been generally introduced the English language, usages, and manners. The colonies possess little or no independent power. They are locally managed by governors and other functionaries appointed by the crown, and are subject to numerous regulations imposed by the imperial Parliament, or by the colonial secretary. Canada, Nova Scotia, New Brunswick, Newfoundland, Jamaica, and other West Indian possessions, and the Cape of Good Hope, individually possess local legislatures, or parliaments, by which various internal concerns, such as making roads, education, imposition of dues on shipping, &c. to defray expenses, are managed. The colonies are not taxed to support the home government, it being a principle in the constitution that there can be no taxation without representation; but they are subjected to various customhouse duties and restrictions, that greatly limit their capacity for improvement. All the raw produce they can export, such as sugar, coffee, timber, &c. is permitted to enter British ports at a duty much lower than the same kind of produce from foreign countries. This preference is in one respect advantageous to them; however, they are at the same time restricted in the purchase of various articles, except from Britain and its possessions. They are also prevented from manufacturing certain kinds of produce; for example, the inhabitants of Jamaica cannot refine their own sugar, but are compelled to send that article to England to be refined, and then buy it back again. By these arrangements the colonies are, generally speaking, in a state of tutelage, and cannot, without a very great change in their affairs, start forward in a course of prosperity; while we at home, by being compelled to pay for their protection, and to buy their high-priced produce, receive no adequate benefit from their possession. The ostensible object of maintaining a connection with the colonies, is to find an outlet for British manufactures, and to employ shipping in the transport of goods. It is, however, extremely doubtful whether the expense incurred in supporting them is not much greater than all the profit derived from commercial intercourse. From the complicated method of keeping the public accounts, it would be impossible to present a connected statement of outlays on account of the colonies; we shall therefore merely select a variety of entries from different Parliamentary reports, aided by information from other sources, in order to give a general idea of the expenses incurred. The following appear for the greater part in the accounts for 1847, and unless otherwise expressed, refer only to one year:—

Expenses of the Colonial Office, L.10,134. Paid to clergy in North America, L.11,578. Indian department, Canada, L.15,000; militia and volunteers in Canada, L.13,000. [Under this head, from 1837 to 1847, L.2,165,748.] Salaries of governors and others in West Indies, L.14,204. Magistrates, West Indies, L.41,600. Ecclesiastical establishment, West Indies, L.20,300. On account of the civil governments—Bermudas, L.4012; Prince Edward's Island, L.1534; Nova Scotia, L.400; Falkland Islands, L.3480; Bahamas, L.8410; Heligoland, L.1023; Port Essington, L.1940; Hong Kong, L.50,000 [from 1841 to 1846, L.314,000]; Western Australia, L.7219; Labuan, L.9627. Lighthouses, Newfoundland, L.4000. Colonial naval yards, L.48,913; victualling establishments, L.9359; medical establishments, L.9555; repairs and new works, L.127,455. Transport of men and stores, &c. L.257,690. Expenditure on Gibraltar and Malta in 1843-4, L.360,000; works in progress there will cost L.460,000. Expenditure in protecting the Ionian Islands, about L.130,000 per annum [value of the whole exports to them in 1844, L.123,998]. Military expenditure on Cape of Good Hope in 1843-4, L.305,000; naval expenditure, L.170,000—total, L.475,000. Expenditure on Mauritius in 1843-4, L.82,000; expense for defences about to be incurred, L.180,000. Military expenditure in New Zealand in one year, L.270,000; cost of civil government, L.26,000—total, L.296,000, which is at the rate of about L.80 a-head of the British population. Altogether, the direct expense of the mother country on account of the colonies may be safely set down at L.4,000,000.

All the expenses, troubles, and anxieties incurred on account of the colonies are believed, we have said, to be compensated by their purchase of our manufactures, their reception of emigrant settlers, and the employment of our shipping. These supposed advantages may be examined separately. The declared value of British and Irish produce and manufactures, exported to the colonies from the United Kingdom in 1847, was

Heligoland,	L.240
Gibraltar,	468,845
Malta and Gozzo,	195,826
Ionian Islands,	143,428
Cape of Good Hope,	898,368
Ascension and St Helena,	31,378
Mauritius,	923,553
Australian Settlements,	1,644,170
North American Colonies,	3,333,014
West Indies and Guiana,	9,102,577
Honduras,	170,947
Falkland Islands,	2,060
Total Exports,	L.8,002,366

Under nine millions for the whole, even taking into account the military dependencies. Therefore, for every pound's worth of goods exported by our merchants, the country, in the form of taxes, pays 9s. But as it loses also at least £3,000,000 on account of differential duties, it may be said to give £7,000,000, in order to sell articles to the value of £9,000,000. It could be shown, however, that the colonies would continue to buy from us were the connection dissolved, or greatly changed in character. The United States of America once were colonies, and the trade with them has vastly increased since they became independent. While they were colonies, the exports to them were latterly under £1,500,000; now they are upwards of £10,000,000 per annum, and require from us neither defence nor management. With regard to the outlet which the colonies afford for our population, it appears, says Sir William Molesworth, 'that in the course of the last twenty years, 1,675,803 persons have emigrated from this country, of whom 825,564 went to the United States, 702,101 to the North American colonies, 127,188 to the Australian colonies, and 19,090 to other places.' One-half of all our emigrants, therefore, proceed to a country which is not under our jurisdiction; nor does it appear that the colonies are preferred by the other half in consequence of their connection with the British government. Large numbers of those who emigrate to Canada proceed afterwards into the United States. We have not seen any statement of what benefit is derived by British shipping from the colonial connection; but whatever it is, there can be no doubt that the same number of ships would be employed in the export and import trade, if the colonial connection was dissevered. In fine, reckoning the expense of military, naval, and civil protection, along with the heavy loss incurred by our obligation to buy their dear produce, it is calculated that in ordinary times the people of Great Britain lose between five and six millions annually by the colonies.

India is not, strictly speaking, a colony or possession of Britain. Politically it belongs to the Honourable East India Company, an association of British merchants, by whose servants it has been conquered, and is now locally governed, under the control and approval, however, of the crown, and a charter granted by the legislature. In virtue of an act of Parliament passed in 1833, the East India Company is guaranteed the government of the British territories in India until April 1854; the company is not to carry on any trade; commerce to be open to British merchants; natural-born subjects of England may proceed

to, settle, and buy lands in India; and natives of India, of whatever colour or religion, are to be eligible to office. India affords no direct revenue or tribute to England, as conquered countries are in general supposed to do. The only advantages which we derive from our occupation of these immense countries, are the undisputed possession of their trade, and the fortunes (sometimes very large) saved out of their salaries by British subjects who are appointed to discharge the duties of government. It is to the trade of the country, however, that we must look for any considerable and permanent advantage; and as this can only be made to increase by the cultivation of peace and order through the country, the interest of Britain becomes directly involved in maintaining henceforth the peace of India. The improvement which a few years of peace effects in these fertile countries is astonishing: the population of a certain portion is supposed to have nearly doubled in the period of comparative peace from 1811 to 1830, being in the former year only forty-five, and in the latter almost ninety millions. Till she came under British rule, India never enjoyed twenty years of peace and orderly government in all her former history. Many faults and oppressions are laid to the charge of the English in India, from which it is impossible to defend them. The taxes (which fall chiefly upon the *land* and the poor peasantry) are very oppressive, and are rendered more so by the unprincipled conduct of the natives who are employed to collect them. Justice also is administered in a foreign language (Persic), and the courts are so few, that districts which are larger than Scotland have hardly one to each. Notwithstanding all this, the preservation of public order and of peace has conferred advantages on the country of the most inestimable kind. Latterly, considerable improvements have been effected by the establishment of schools, and by Christian missionaries.

As India, by the taxes which it pays to the Company, clears the cost of its own protection, and all its other public expenses, it may be considered as the only foreign possession of Britain whose trade affords an unburdened profit to the home country. The forces employed by the Company, partly composed of British regular troops, and partly of native levies, amounted in 1846 to 250,000 men. In 1833–4, its annual revenue was £13,680,165, an enormous sum to be raised in a semi-barbarous country, yet no more than sufficient to discharge the annual expenses. The Company at that time was in debt to the amount of £35,463,483.

POPULATION—SOCIAL STATISTICS.

The people of England, Scotland, and Ireland, respectively, possess certain national peculiarities of character; but these, from the general intercourse which now prevails, are gradually disappearing, and a uniform British character is becoming daily more apparent. In this general and happy assimilation, the English qualities of mind and habits predominate. The chief feature in the English character is an ardent love of liberty, which renders the people extremely tenacious of their civil rights, stern advocates of justice, and patriotic in the highest degree. In their manners they are grave rather than gay, blunt rather than ceremonious. In their habits they are enterprising, industrious, and provident; in their feelings humane. In all mercantile transactions the greatest integrity exists, and promises are faithfully performed. In the middle and upper classes the highest civilisation prevails, and all the social virtues and comforts of domestic life are sedulously cultivated. There are some favourite field-sports and boisterous amusements; but the enjoyments of the English are chiefly within doors, in their own well-regulated homes. A love of home is a marked peculiarity in the affections of the English. The eminent importance attained by the British in the scale of nations, appears to depend mainly upon two features of the common character—the high moral and intellectual character of the people at large, and their extraordinary skill in producing articles of necessity and luxury, as well as their dexterity in the commerce by which these are diffused over the world.

An account of the population of the empire has been taken at intervals of ten years from 1801; and the following table will show the gradual increase which has occurred since 1811:—

	1811.	1821.	1831.	1841.
England and Wales,	10,163,[illegible]6	11,978,975	13,894,469	15,906,741
Scotland,	1,805,688	2,093,456	2,364,307	2,620,610
Ireland,	4,500,000	6,802,033	7,734,[illegible]	8,175,194
Totals,	16,469,864	20,874,464	23,994,741	26,702,475

These estimates are exclusive of the army and navy, as also of the Channel Islands and the Isle of Man, which are noticed under another section. The increase of the population, as compared with the returns of 1831, is at the rate of 14·5 per cent. for England; 13 per cent. for Wales; for Scotland, 11·1; for the islands in the British seas, 19·6: making the increase for the whole of Great Britain 14 per cent., being less than that of the ten years ending 1831, which was 15 per cent.

The following is the latest statement of the extent and population of the British Empire:—

Colonial and Foreign Possessions.	Square Miles.	Population.
England and Wales,	57,812	15,906,741
Scotland,	32,167	2,620,610
Ireland,	32,512	8,175,194
Man and Channel Islands,	332	124,040
European Dependencies,	145	140,282
Asiatic do.	754,687	95,010,000
African do.	24,687	1,445,379
North American, do.	754,[illegible]	1,850,000
South American do.	89,000	103,989
West Indies,	76,394	798,908
Australasia,	560,000	370,000
Protected and Tributary States—		
Ionian Islands,	1,041	223,345
East Indian States,	550,000	28,000,000
Total,	3,146,747	166,278,641

Occupations.—It appears that those engaged in the close and vigilant pursuits of manufactures and merchandise are, in England and Scotland, as two to one in numbers, compared with those who apply to the more leisurely business of agriculture. In 1841 the number of those in active life or living independently were 7,846,569—leaving 10,997,865 to be understood as women and children having no recognised occupations. Of those employed—3,110,376 were engaged in commerce, trade, and manufactures; 1,499,278 in agriculture, grazing, gardening, and other kindred pursuits; 761,868 in miscellaneous labour, as mines, quarries, porterage, &c.; 218,610 comprised the navy, national and mercantile, fishermen, watermen, &c.; 131,464 the army at home and abroad; 63,184 were engaged in the learned professions—divinity, law, and physic; 142,836 were following pursuits requiring education, including those engaged in imparting knowledge to others; 16,959 were in the civil service of government; 25,275 were in municipal and parochial offices; 1,165,233 were in domestic service; 199,069 were alms-people, paupers, lunatics, and pensioners; 511,440 were returned as independent; 2424 were afloat and undescribed; leaving a residue of 10,996,398, in respect of whose occupations no particulars were given. The number of persons engaged in, and dependent upon, agriculture in Ireland, is comparatively much larger than in Great Britain. It appears from the census of 1841, that there are 5,358,034 persons directly dependent upon the culture of the soil out of a population of 8,175,124; and taking into account its subsidiary employments, the dependence on agriculture will even be proportionally greater.

In considering the number of persons supported by any particular manufacture, it is to be remembered that the numbers given are of actual workers, and not of those who, as wives, children, &c. are supported by the labour of others. The total number of persons

whose occupations were ascertained in Great Britain was 7,846,569, leaving 10,997,865 as the 'residue' of the population, which must be taken to consist of persons dependent on the former. Therefore, to the number given under each employment, we must add another number bearing to it the proportion of about 11 to 8, in order to ascertain the entire number of individuals whom that branch of industry supports. It is worthy of remark, that, from other reports, the proportion of those workers who are of tender age is decreasing, and the total number of children now engaged in the above occupations is only 31,566, under 1-24th of the whole workers. The largest number returned under any one occupation is of domestic servants, being 1,165,233, of whom 908,825 are females.

The statement of the aggregate population of the British islands, affords no idea of the force which is actually employed in agriculture and manufactures. The effective labourers (men) are estimated to amount to no more than 7,500,000, whereas, reckoning the powers exerted in productive industry by animals, mills, steam-engines, and mechanism of various kinds, the force is equal to the strength of between 65,000,000 and 70,000,000 working-men.

Dwellings.—The number of houses in England in 1841 were—inhabited, 2,753,295; uninhabited, 162,756; building, 25,882. The number in Wales, inhabited, 188,196; uninhabited, 10,133; building, 1769. In Scotland, inhabited, 503,357; uninhabited, 24,307; building, 2760. In the islands of the British seas, 19,159 inhabited; 865 uninhabited; and 220 building. Grand totals for the whole of Great Britain, 3,464,007 inhabited, 198,061 uninhabited, 30,631 building—altogether, 3,692,679 houses. It appears from the census, however, that in Great Britain on the night of the 6th June 1841, that 22,303 persons slept in barns, tents, pits, and in the open air.

Vital Statistics.—England is now provided with a law for enforcing the registration of births, marriages, and deaths; but in other parts of the empire, Scotland in particular, the arrangements for these useful objects are very imperfect, and demand speedy amendment. At the celebration of marriage, parties are required to sign their names; and it appears that, on an average, 33 in the 100 of males, and 49 in the 100 of females, sign with a mark, being unable to write. The average age of men in England at marriage is about 27 years, and of women, 25 years and a few months. Of 100 marriages, 8 take place with both parties under age; and it is remarkable that the agricultural districts furnish the greatest proportion of early marriages. The average annual number of marriages for England and Wales to every 10,000 inhabitants is 78. The average of births to every 10,000 for England and Wales is 319; of deaths, 221. It may be worth noticing, that it is in the maritime counties we find the least mortality.

Pauperism—Crime.—The population of the United Kingdom thus consists of various classes of persons, amongst whom, with respect to wealth, education, and general condition, even more than the usual differences are to be found—the greatest wealth and luxury contrasting with the most abject poverty and want, and the most industrious prudence with the utmost negligence and want of self-respect. Without entering minutely into the political and social causes of this distressing difference, it may be mentioned as a general result, that the difficulty of purchasing food leads to a corresponding depression of circumstances in the humbler orders of the community, and either causes an extensive dependence on poor-rates for support, or produces debased and dangerous habits of living. The poor of England are entitled by law to support in workhouses, according to the provisions of an act of Parliament passed in 1834. In 1847, the number of paupers (including children) relieved in England, was 1,721,350, or about 1 in 9 of the population. Of these 265,087 received in-door relief; 1,456,313 received out-door relief. The amount received was £7,117,359; of which £5,298,787 was expended on the poor—£899,095 on in-maintenance, and £3,467,960 on out-relief.

In Ireland, similar poor-laws were introduced in 1838, and are likely to prove of great service to that part of the empire. 'The chief peculiarity of these laws,' says Macculloch, 'is that relief under them is administered solely in workhouses; and thus they differ from the Scotch poor-laws, under which workhouses have scarcely been made use of at all, except in a few large towns; and from the English poor-laws, which were intended by the legislature to be a mixed system of relief to the able-bodied in workhouses, and of relief to the impotent poor, partly in workhouses and partly at their own homes. They differ again from the English and Scotch poor-laws in this, that while in England all destitute persons have a legal right to relief, and in Scotland all destitute impotent persons have a similar right, in Ireland, on the contrary, no individual was intended to have a legal right to relief; but at the same time, whether able-bodied or impotent, he may equally receive relief in workhouses, provided he is destitute.' Under this law, the expenditure for the poor in Ireland for the year ending 1st January 1846 was £316,026, and the number of paupers 43,293; but in November 1846, in consequence of the potato failure, the number was 80,600.

In Scotland, as above stated, only the impotent or very aged poor can legally claim relief from the parish funds, which, by a recent act, are managed by parochial boards, subject to the direction and control of a Central Board, which is established in Edinburgh. In 1846–47, the number of paupers on the roll or registered was 85,971; casual poor, 60,399—making the number of persons receiving relief in Scotland during the year, 146,370, or about 1 in 18 of the population. The amount received was £435,367: of which £336,515 was expended on registered poor; £36,340 on casual poor; £12,879 on medical relief; £43,158 on management; and £5022 on litigation.

The present condition of society throughout the United Kingdom exhibits the spectacle of great and valuable efforts at improvement among the more enlightened classes. Within the last twenty years, the utility of the press has been immensely increased, and works of instruction and entertainment have been circulated in departments of society where formerly nothing of the kind was heard of. The establishment of mechanics' institutions, lyceums, exhibitions of works of art, reading societies, and other means of intellectual improvement, forms another distinguishing feature of modern society. At the same time great masses of the people, for lack of education, and from other unfortunate circumstances, are evidently gravitating into a lower condition. From these reasons, and others connected with the development of our manufacturing and commercial system, convictions for crime have been latterly increasing. In 1847 there were in England 28,833 offenders, of whom 21,582 were convicted; in Ireland 31,209,* of whom 15,257 were convicted; in Scotland 4635, of whom 3569 were convicted. Of the offences, 7611 were committed against the person; 4747 against property committed with violence; 43,367 against property without violence; 589 malicious offences against property; 835 forgery and offences against the currency; and 7528 other offences not included in the above. In reference to these details, it must be remarked that the vigilance of our police brings to light almost every offence, however trivial; and it is to this certainty of detection, together with the general spread of education, the establishment of industrial schools, and the introduction of an improved treatment of offenders, that we look forward to some diminution of this painful catalogue of crime.

* The remarkable amount of crime in Ireland during the year 1847, is attributed, in the explanations which accompany the official returns, to 'the famine which prevailed for that entire period, and the social disorganization consequent on a state of universal distress.' In 1846, the number of offenders was only 18,492; and in 1845, 16,698.

EUROPE.

REFERRING the reader for all that appertains to the general constitution of the globe to our article on PHYSICAL GEOGRAPHY (No. 4), we purpose, in this and several following sheets, to direct attention to the special features of the respective continents—describing their territories and states, their natural products, their commercial industry, population, laws, religion, and other topics usually comprehended under the title of POLITICAL GEOGRAPHY. In doing so we shall endeavour to be as systematic as possible, believing that we shall thereby communicate not only a larger amount of information, but render that information more precise and accurate, and more readily available for the purposes of reference and comparison.

Constituting but a fragment of the Old or Eastern World, and being surrounded on more than three sides by water, Europe, strictly speaking, is not entitled to the appellation of an independent continent. But though the smallest of the *quarters* into which geographers have divided the globe, it is by far the most important—its inhabitants giving now, as they have long done, the tone and character to human progress. Its limits are usually comprehended within the 36th and 71st degrees of north latitude, and the 10th degree of west and 64th of east longitude; thus placing it almost wholly within the northern temperate zone. Including the islands, which contain about 317,000 square miles, the land superficies of Europe is estimated at 3,724,000 square miles; its population at nearly 240,000,000. At present (1849) it is divided into fifty-eight states; a few of which, however, are not altogether independent. The leading states, usually styled 'the Five Great Powers of Europe,' are Great Britain, France, Russia, Austria, and Prussia. Those of a secondary rank are Spain, Sweden, Denmark, Holland, Belgium, Portugal, Naples, Bavaria, Sardinia, Saxony, Hanover, the Swiss Confederation, and Turkey. Those of a third rank are the small constituent principalities of Germany and Italy. It is to the continental or foreign states that we now confine our description, reserving the component parts of the United Kingdom—England, Scotland, and Ireland—for treatment in the three subsequent numbers.

FRANCE.

France, one of the largest and most important of the European states, is situated between lat. 42° 20′ and 51° 3′ north, and long. 3° 51′ east, and 9° 27′ west. It is bounded on the north by the English Channel, Straits of Dover, Belgium, the Prussian province of Lower Rhine, and Rhenish Bavaria; on the east by Baden, from which it is separated by the Rhine, by Switzerland, and Italy; on the south by the Mediterranean and by Spain, from which it is separated by the Pyrenees; and on the west by the Atlantic. The greatest length of the country is 664 miles, and its breadth 620; its area, including Corsica and the islands* which stud the sea-coast, is estimated at 203,736 square miles.

* The *Channel islands*, though geographically connected with France, have been an appendage to the English crown since the eleventh century. The group consists of Jersey, 12 miles by 5 or 6; Guernsey, 9 miles by 6; Alderney, Sark, and several other islets and rocks of small extent. The larger of those islands are fertile, and well diversified by orchards, clumps, and hedgerows;

Superficially, France may be described as a flat country, the greater portion consisting of valley-like tracts or open plateaux, with low hilly ranges or swelling eminences between. Its scenery, therefore, exhibits little of the romantic and picturesque, and with the exception of the Limousin, and some of the larger river courses, is, on the whole, rather flat and uninteresting. The principal hills which diversify the surface are—1. The Vosges, on the north-east, presenting rounded outlines, with gentle slopes, and affording much open pasture; the highest point 4693 feet. 2. The Jura Mountains, lying south of the Vosges, and forming part of the boundary between France and Switzerland, the extreme height of which is about 6000 feet. 3. The Cevennes, and other portions of the long range which forms, as it were, the western brim of the valley of the Saone and Rhone: the highest points do not exceed 5000 feet. This range may be said to form the great water-shed of France, from which all the large rivers flow in a north-west direction to the Atlantic. 4. The clustering hills of Auvergne, or central France, remarkable for their crateriform tops and recent volcanic origin, the highest of which is Puy de Sancy, 6200 feet. The largest and best-defined *river-basins* or *valleys* are those of the Saone and Rhone on the east, which may be regarded as one; those of the Adour, Garonne, Lot, and Dordogne on the south and south-west; those of the Loire and Seine in the centre; and those of the Somme, Meuse, Moselle, and Rhine on the north. The soil of most of these valleys is a fine deep alluvium, with a greater or less admixture of sand: some, like the Limousin in Auvergne, are of unsurpassed fertility; and all, under proper cultivation, are capable of yielding the ordinary crops in more than average abundance. There are large tracts of heath in Bretagne, Anjou, and Maine; and the Atlantic sea-board presents in many places, as in Landes, wide expanses covered with sand-dunes and intervening marshy lagoons, on which nothing useful can flourish except the sea-pine, planted there to protect the surface from further drift.

The great *rivers* exclusively French have all a westerly flow towards the Atlantic; those flowing northward—the Scheldt, Sambre, Meuse, Moselle, and much-coveted Rhine—have only the upper and least valuable portions of their courses in France; and the Rhone, the sole large river running southward, has also a great portion of its course in another country. Of those flowing westward, the following are the most important:—1. The Seine, navigable to Rouen for vessels of 200 tons, and for barges more than 300 miles inland. 2. The Loire, the largest river belonging exclusively to France, which, although it receives numerous tributaries, and possesses a considerable volume of water, is of remarkably little use in commerce, and can only carry small barges and steam-vessels; a defect resulting from numerous sandbanks. 3. The Garonne, which is navigable for barges about 280 miles of its course, and receives a vast number of tributaries. The Rhone during its course in France is a noble, but rapid river, and though much obstructed by shoals and shifting sandbanks, is navigable for flat-bottomed steamers to Chalons-sur-Saone, a distance of 275 miles from Marseilles.

'*Geologically*,' says one authority, 'the whole of France may be considered as one extensive basin, the circumference and centre of which consist of primitive formations, the intermediate space being filled with those of a secondary and tertiary kind.' Taking this statement as a mere proximate outline, we find primary rocks in the Ardennes on the north; in the Vosges, Jura, and Alpine ridges on the east; in the Pyrenees on the south; in Bretagne, Maine, and Normandy on the west; and, centrally, in the hilly ranges of Auvergne. Lying upon these in many places, without the intervention of the transition and older secondary strata, occur the coal-measures, the oolite limestones and shales, and the chalk; and not unfrequently even the coal-measures are absent, and the oolitic and chalk repose immediately on the upper primaries. The tertiaries generally occupy the great river drainage of the centre, showing that at no very distant epoch a large portion of France was a shallow sea or estuary of deposit. The chief *minerals* are—coal from upwards of forty indifferent fields, not exceeding 2,800,000 tons annually; iron largely from ten or twelve districts; rock-salt from Lorraine; gypsum, or plaster of Paris, in unlimited quantities; asphalte from Seyssel and the Jura; abundance of limestone, slate, and granite; excellent marble and building stones; mill or burr-stone; lithographic slate; graphite, jet, and alum; and a large supply of first porcelain, and other clays. With the exception of iron, the other metals are of no great commercial importance; the total value of lead, silver, antimony, copper, manganese, arsenic, &c. annually produced rarely exceeding £60,000.

The *climate* of a country whose extreme limits lie between the 42d and 51st parallels of north latitude—whose western region is subject to the influences of the vast Atlantic, while its central and eastern, exempt from these influences, are subject to those of a higher elevation—must necessarily exhibit considerable diversity. Geographers have accordingly divided the whole into four regions—namely, 1. The most southerly, in which the vine, olive, mulberry, and orange flourish, bounded north and west by a line drawn from Bagnères-de-Luchon in the Pyrenees to Die in Drôme; 2. That through which the cultivation of the vine and maize extends, stretching as far north as a line passing from the mouth of the Garonne to the northern extremity of Alsace; 3. That region which terminates with the culture of the vine, near a line drawn from the mouth of the Loire to Mezieres in Ardennes; and 4. The remaining portion of the country, having a climate somewhat allied to that of England, and yielding rich verdant pastures and forest growth. Along the entire western coast the climate is distinguished by a greater degree of humidity than in any other district; the south and east have about a third fewer rainy days than the north and west; winter is often pretty severely felt in the north-east; and though snow seldom lies in the central and southern regions, yet these are liable to destructive hail and thunder-storms, as well as to sudden inundations.

The *native vegetation* of the country, though numbering several thousand species, contains few, with the exception of the apple, pear, plum, and fig, that are of much economical importance. The existing Flora, however, is one of great variety and value, embracing exotics from almost every region of the globe, which have become readily naturalised in its fine soil and under its genial climate. Of grains and vegetables largely cultivated, we may enumerate wheat, rye, oats, maize, millet, buckwheat, kidney-beans, pease, carrot, beet, melons, potatoes, flax, hemp, and tobacco; and madder, saffron, and hops on a smaller scale. Of fruit-trees, the vine, olive, orange, pistachio, fig, apple, pear, plum, peach, apricot, and cherry, with which we may also class the mulberry and caper. Of forest-trees, the oak, beech, maple, ash, chestnut, walnut, birch, poplar, larch, pine, fir, box, cornel, acacia, and cork-tree. As a certain consequence of climate and soil, these plants are not found indifferently all over the surface, but are restricted to peculiar localities, where they meet with conditions necessary to their growth and perfection, or where, through accidental causes, they have become objects of especial culture. The forest growth of France is said to cover fully one-eighth of the entire surface, or about 17,000,000 British acres—an amount which is rendered necessary by the use of wood as the chief domestic fuel.

Of the *mammalia* found wild in France, the principal are—the black and brown bears of the Pyrenees, the wolf, the fox, the lynx of the Alps, the chamois and wild goat of the eastern and southern hills, the wild boar, badger, otter, marmot, ermine, and hamster.

they enjoy exemption from almost every species of taxation, have a considerable commerce, and are favourite resorts for persons with limited incomes. Area of the whole, 112 square miles; population in 1841, 76,094.

The *birds* belonging to, or at least frequenting France, are exceedingly numerous—the becafico or fig-pecker, the oriolan, quail, bustard, flamingo, hoopoe, turtle-dove, nightingale, &c. being the chief of those least known to English readers. Of *reptiles*, the viper, asp, snake, and [illegible] the edible frog, and other varieties of the frog and [illegible]; the fresh-water tortoise of the southern rivers, and the green turtle taken occasionally on the southern sea-coasts. The *fishes* and *mollusca*, with the exception of the mullet, sardine, carp, horse-foot oyster, and edible snail, are much the same as those belonging to England. The *insects* of any economical importance are the bee, silk-worm, gall-nut fly, and the blistering fly. Respecting the breeds of the *domesticated animals*, if we except the merino sheep and poultry, it may be safely asserted that they are all inferior to those of Great Britain.

The *inhabitants* are generally arranged by ethnologists under five distinct heads or races:—1. The *French* proper, constituting nine-tenths of the population, and consisting subordinately of the Greco-Latins or French, north of the Loire, and the Romance, south of that boundary; with whom may be classed the Italians of Corsica; 2. The *Germanic* races of Alsace and Lorraine, and the Flemings of the north; 3. The *Celtic* or Cymric race (Bretons) of Bretagne; 4. The *Basques* of the Low Pyrenees; and 5. The *Jews*, who are found in all the principal towns. There are thus six distinct languages spoken within the kingdom—French and Italian (both of Latin origin), German, Celtic, Basque, and Hebraic; independent of several widely-differing provincial dialects of the French and German.

Though the *Roman Catholic faith* may be regarded as the national religion (five-sixths of the people being attached to it), yet no form of worship is expressly established or associated with the state. Reckoning the Catholic population at 28,210,000, and the Protestants at 6,010,000, the remainder may be regarded as consisting of Jews, Rationalists, Anabaptists, and other minor sects. Both the Catholic and Protestant clergy are paid out of the public revenue—the sum annually allotted for religious purposes amounting to nearly £1,172,000 sterling. With regard to *education*, the country may be said to be at present under the operation of an efficient and liberal system. By the law of 1833, it is ordained that every commune by itself, or by uniting with others, shall have one elementary school, independent of infant schools; that every commune with a population of 6000 shall have, in addition, a superior school; and that every department, either by itself, or by uniting with others, shall have a normal school. Above these are 350 communal or royal colleges supported by the state; and higher still are the 26 head or chief academies. These, collectively, form what is called the 'University of France,' which is under the superintendence of the Minister of Public Instruction, assisted by a council and a number of inspectors—the whole machinery requiring an annual outlay of about £520,000 sterling.

With respect to *national industry*, France may be regarded more as an agricultural than a manufacturing country. By the law of inheritance, the property of a father is divided equally among his children; and consequently there is a progressive tendency to more minute divisions and subdivisions of the land. The entire number of landed proprietors was lately 10,895,000, of whom about one-half were assessed at less than five francs annually. A vast number of the properties are under five acres in extent, and the result is a generally mean condition of rural affairs, and the total absence of all high-class systematic agriculture. According to Dombasle, the total produce of agricultural industry in France amounts to £199,200,000, of which £108,000,000 are derived from the bread-corns; £32,000,000 from the vine; £8,400,000 from live-stock and wool. The *fisheries* on the coast are not of much importance, the principal being those of pilchards, herrings, mackerel, oysters, and anchovies, employing in all about 5800 boats both in the Mediterranean and Atlantic. The *mining* departments have been already alluded to; but though fostered in every manner, the coal raised does not exceed a tenth, and iron is somewhat less than a fifth, of that annually produced in Britain. In *manufactures* France ranks next to Great Britain, the estimated annual value of the goods produced amounting to £92,000,000: of which silk, £12,000,000; woollen, £10,600,000; cotton, £9,000,000; linen, £10,400,000; hardwares, £8,700,000; leather, £8,000,000; glass, £1,200,000; paper, £1,000,000; and porcelain, £800,000. The minor manufactures of the country would be tedious to mention; most of them exhibit a greater degree of skill and ingenuity than is to be met with in any other country. *Ship-building* is carried on to some extent at Rochefort, Brest, Cherbourg, &c.; and in engine-building, and other heavy machinery, the French are now beginning to attain considerable eminence. The *commerce* of France has more than doubled since the peace in 1815, her imports now amounting to about thirty-eight, and her exports to thirty-nine millions sterling. Her mercantile navy is estimated at 15,600 vessels, carrying an aggregate burden of 700,000 tons. The internal communication of the country is carried on by well-kept roads; these being classed into royal, departmental, and communal, according as they are upheld by the government, or by the departments and communes to which they belong; by river navigation, of which there is upwards of 3616 miles; by 2250 miles of canal; and by railways, of which about 2000 miles are constructed.

The *government* of France, until the Revolution of 1848, was a hereditary, constitutional, or limited monarchy, with the succession restricted to males. The legislative power was vested collectively in the king and the two great national assemblies—the Chamber of Peers and the Chamber of Deputies. The executive was vested in a ministry, appointed by the king, as head of the state, and consisted of—1. Minister of the Interior; 2. Justice and Public Worship; 3. Public Instruction; 4. Public Works; 5. Trade and Agriculture; 6. Finances; 7. Foreign Affairs; 8. War; 9. Marine and Colonies. At present (1849) the government of France is Republican; the legislative power being vested in a Chamber of Deputies elected by universal suffrage; and the executive conducted by a President and Ministry, much in the same manner as under the monarchy.—Revenue said to be £47,000,000; present expenditure, £72,000,000; debt, £211,000,000; army, 355,000. Capital, Paris, with a population of 1,053,897.

For *administrative purposes*, France is partitioned into 86 departments, which are subdivided into 368 arrondissements, 2834 cantons, and 37,187 communes. At the head of each department is a prefect, named by the government; he is assisted by a council, which sits for a week annually to distribute the imposition of taxes, and decide on the wants of the department. In each arrondissement there is a sous-prefect, likewise named by the executive, and subordinate to the prefect: the sous-prefect is also assisted by a council. In each canton there is a judge de paix, with judicial functions in matters of inferior importance. In each commune there is a maire, assisted by adjoints.

SPAIN AND PORTUGAL.

These two perfectly distinct and independent kingdoms belong to a region so unique in character and situation, that we shall treat them, in regard to their physical geography, as one. This region, commonly known in Britain as 'The Peninsula,' lies at the south-western extremity of the European continent, with which it is connected by an isthmus 230 miles broad, and is situated between lat. 36° and 40° north, and between long. 4° east and 10° west. It is bounded on the north by the Bay of Biscay, and by France, from which it is separated by the Pyrenees; on the east by the Mediterranean; on the south by the Mediterranean, the Straits of Gibraltar,* and the Atlantic; and on the

* The promontory, fortress, town, and bay of Gibraltar, situ-

west wholly by the Atlantic. The only islands geographically connected are the Balearic—an important group, exhibiting in miniature all the characteristic features of the mainland. The area thus included is computed at 216,780 square miles, of which 182,270 belong to Spain, and 34,510 to Portugal.

In *superficial character* the Peninsula is decidedly mountainous. 'The interior may be considered as one vast table-land, from 1800 to 2600 feet above the level of the sea, traversed by numerous mountains, and intersected by rivers. Around this central nucleus extends a narrow belt of maritime low land, sloping gradually towards the sea, and broken into an alternation of hills and valleys, which produce a most agreeable variety of aspect, and present a pleasing contrast to the bleak and barren sameness by which the central region is characterised.' The *geology* of the country is but indifferently known. The principal economic minerals are—granite, marble, serpentine, common limestone, coal, rock-salt, gypsum, alabaster, meerschaum, and several of the precious stones; the metals—iron, lead, silver, mercury, tin, copper, antimony, and cobalt.

The *principal rivers* of the Peninsula are—the Ebro and Xucar, falling into the Mediterranean, both unnavigable; the Guadilquiver, Guadiana, Tagus, Douro, and Minho, discharging themselves into the Atlantic, and all forming channels of communication with the interior. In this respect the Guadilquiver is the most important, being navigable for vessels of 100 tons to Seville, and for flat-bottomed boats to Cordova.

The *climate*, as might be expected from the position and physical conformation of the region, is extremely diversified. All along the Mediterranean sea-board the temperature is mild and equable, seldom sinking below 32°, and generally ranging between 55° and 60° Fahrenheit. Here snow is almost unknown, and verdure is rarely checked, unless during the occasional droughts of summer. On the central plateau matters are quite reversed; the summer's heat is excessive, and the winter's cold, rendered keener by stormy blasts from the mountains, is equally so. In this region the winter is long, and snow covers the sierras; while the summer is short, and so hot, that verdure is often destroyed. On the northern and western sea-board the summer becomes cooler; and the winds, charged with moisture from the Atlantic, bring rains and other atmospheric diversities.

The *vegetation* of a country so diversified in surface and climate must necessarily present great variety, and thus we find within its limits the banana and palm of the tropics, and the pine of the polar regions. Though a number of the more useful plants in the peninsula be indigenous, yet a great many are naturalised exotics, imported during the early and better days of its commerce and naval adventure. The chief of these, without reference to locality or culture, are—wheat, oats, barley, maize, rice, hemp, flax; the vine, olive, sugar-cane, cotton, lemon, citron, fig, pomegranate, date, almond, pistachio, banana, and plantain; the apple, pear, peach, cherry, walnut, chestnut, and hazel; and to these we may add the dwarf-palm, mulberry, carob, caper, red pepper, saffron, and aloe. With respect to forest-trees there is much less variety; the peninsula being one of the worst wooded regions in Europe. The principal trees are—the evergreen, cork, cochineal, and other varieties of oak; the beech, poplar, sumach, tamarisk, chestnut; and in the sierras and higher grounds, the fir and pine. The *animal kingdom* presents only one or two features worthy of notice. The principal wild animals are—the bear, wolf, fox, herds of wild-boar, lynx, wild-cat, and monkey; the vulture, quail, bustard, flamingo, and some African forms, are peculiar to the birds; reptiles of the serpent family are more numerous than in any other part of Europe; and of insects economically important, may be mentioned the bee, silk-worm, gall-nut fly, and cantharides. The distinguishing features in the domesticated animals are—the horse, of Arab extraction; mules, the finest in the world; and the merino-sheep.

The *inhabitants* of the peninsula—Spaniards and Portuguese being originally one—are usually arranged into four races:—1. The *Spaniards*, an admixture of Teutonic and Roman blood, who constitute the great bulk of the people, and whose language is a compound of Visigothic and Latin; 2. The *Basques*, of Navarre and the Basque provinces; 3. The *Moresques*, or Moors, who are found chiefly in the south; and 4. The *Gitanos*, or Gipsies, spread indiscriminately over the country, but preserving intact the individuality and peculiarities of their race.

The *religion* of both countries is Roman Catholic; and until some recent reformations, which have yet taken little effect, was of the most degraded and degrading character. 'The peninsula,' says a recent writer, 'swarms with an idle, ignorant, and intermeddling priesthood; and though their power be now greatly shorn by the abolition of their regular establishments, yet their influence both over the government and the people is immense; and, to their shame be it added, that that influence is chiefly exercised in retarding the social progress of the people.' In Spain, the *education* of the people is entirely under the power of the clergy. There are, properly speaking, no elementary establishments; for although several schools, academies, and colleges have been endowed, the unsettled state of the country has prevented these from taking the effect. Portugal, on the other hand, can boast of a number of seminaries, some of which are nominally of a higher class; but how they answer the end intended, may be gathered from the fact, that the pupils are only about 1 in 90 of the entire population.

The *industrial pursuits* of the two kingdoms composing the peninsula are much of the same kind and character. Both are more agricultural than manufacturing or commercial countries; comprehending under the former term all that appertains to grain, fruits, herds, and other produce depending upon the soil. Anything like a systematic *agriculture*, however, is altogether out of the question; nor need much improvement be looked for so long as both states remain in their present distracted condition, and so long as the present mode of tenure exists. In *mining*, matters are not quite so bad; and of late, considerable activity has been exhibited, principally, however, through the agency of foreign companies, in the quicksilver, lead, and iron departments. In the *arts* and *manufactures*, neither country exhibits much skill or activity; silks of average quality, coarse woollens, cottons and linens, paper, leather, plate and jewellery, soap and barilla, comprising all that are of any importance. As to their *commerce*, whatever it may have been in the fourteenth and fifteenth centuries, it is now of little importance, a great portion of the foreign trade of the peninsula being conducted by the merchants and ships of other nations. The chief exports of Spain are—wine, quicksilver, lead, wool, raisins, figs, oranges, lemons, and other fruits; olive-oil, barilla, cork-bark, honey, and occasionally some wheat—valued annually at £4,500,000: those of Portugal are wine, oranges, lemons, figs, and other fruits; cork-bark, olive-oil, sumach, wool, goats' skins, and small quantities of tallow, brandy, and other articles, valued at £2,000,000. The imports amount nearly to the same sum.

The *government of Portugal* is a limited hereditary monarchy, with the succession unrestricted to sex. By the charter of 1826, the legislative power is vested in the sovereign and the cortes, who are divided into two

ated on the Spanish side of the strait, belong to Britain. The promontory consists of a vast rock, rising from 1200 to 1400 feet above the sea; is about 3 miles in length, and from ¼ to ¾ of a mile in width; and is joined to the mainland by a low sandy isthmus about 1½ miles in length. On the north side, fronting the isthmus, the rock is almost perpendicular; the east and south sides are also steep and rugged; but on the west side it slopes downward to a fine bay 9 miles long by 4½ broad. On this slope lies the town, containing a mixed population of 16,000; and above rise the principal ramparts of the rocky fortress, which is generally garrisoned by upwards of 2000 troops.

chambers—the Chamber of Peers, named by the sovereign, who are unlimited in number, and whose dignity is hereditary or for life; and the Chamber of Deputies, elected for periods of four years by provincial electors, who are themselves named by the primary assemblies of parishes. More than this cannot be said of the government of a country which is incessantly torn asunder by contending factions, and where a new system of administration is set up to-day only to be overturned to-morrow. Total population, 3,549,994; annual revenue, £2,550,000; debt, £19,838,000; army, 18,000. The capital city is Lisbon on the Tagus, with a population of 260,000.

The *government of Spain* is also a limited hereditary monarchy, with the succession unrestricted to sex. The legislative power is vested in the sovereign and cortes, or national assembly, which is divided into two chambers—the Senate, composed of the prelates, hereditary grandees, and certain others, nominated by the sovereign for life; and the Congress of Deputies, composed of citizens elected for three years by the juntas of provinces, the members of which are elected by the municipal bodies, or ayuntamientos. Such, we believe, is the present constitution; but no less than four constitutions have been in operation during the present century, and matters yet remain in a very unsettled condition. The total population of the country is estimated at 12,387,000; annual revenue, £11,700,000; debt, £286,300,000, of which only £89,600,000 is acknowledged; army, 69,000. The capital city is Madrid, with a population of 210,000.

SWITZERLAND.

Situated between lat. 45° 50′ and 47° 45′ north, and long. 5° 55′ and 10° 30′ east, Switzerland occupies the very centre of the Alpine development, and is consequently the most elevated and irregular of European countries. It is bounded on the north by Germany; on the east by Austria; on the south by Italy; and on the west by France. Its superficies is estimated at 14,950 square miles, of which a large proportion is covered with lakes and glaciers.

The *superficial character* of the country is sufficiently indicated by the mention of its position—a region composed of mountain-ridges, radiating in every direction, with narrow and tortuous river-valleys between. The higher mountain-ridges range from 6000 to 15,700 feet above the sea; their summits from 9600 feet and upwards, buried in perpetual snow and glaciers, and their sides broken into every imaginable diversity of crag, cliff, ravine, and waterfall, dotted at intervals with clumps of pine and fir. The valleys, on the other hand, though still from 1200 to 1500 feet above sea-level, are distinguished alike for fertility and beauty, and form a singular contrast with the rugged heights which frown above them. The tract lying between the Alps and Jura mountains, and in which all the great lakes from Constance to Geneva are situated, may be regarded as the Lowlands of Switzerland; and yet the general altitude of this plateau is from 1600 to 2000 feet, at the same time that it is intersected by numerous ridges and river courses.

The *rock formations* in the higher and central districts are strictly primary, flanked by transition and the older secondaries. The equivalents of our own lias and chalks are also found at great heights overlying the older rocks, thus marking the date of the Alpine and Jura elevation; and in the low tract above described occur alternations of soft greenish sandstones and limestones, the supposed equivalents of the Paris tertiaries. The mineral products are chiefly confined to roofing-slate, marble, gypsum, granite and other building stones, and a few iron and asphalte mines in the Jura. Traces of coal have been met with; salt springs occur in Basle; and springs of some medicinal celebrity in Berne, Vaud, Glarus, and St Gall.

Several of the great European *rivers*—the Rhine, Rhone, Inn, Tesino, and Doubs—have their sources amid the glaciers of Switzerland, which thus enjoys them merely as rapid mountain-streams, unavailable as channels of communication. The Aar is the only river of any navigable importance, having its course exclusively within the territory of the Confederation. The *lakes* of Switzerland, either as regards their extent or the beauty and magnificence of their scenery, are unexcelled by any in the world. The principal are—Constance or the Boden See, Geneva or Leman, Neufchatel, Zurich, Lucerne, the Unter See, Wallenstadt, Zug, Thun, and Briens, on this side the Alps; and portions of Maggiore, Lugano, &c. which lie on the other side of the Alps, chiefly within the confines of Italy. The four first are the most important as well as the largest, and are traversed by small steamers in addition to the usual sailing boats of the country.

With respect to *climate*, Switzerland is said to be much colder than its latitude or its position in Europe would appear to warrant. The mean annual temperature at Berne is 45° Fahrenheit; at Basle 46°; and at Geneva (1200 feet above the sea) 46½°. Of course altitude is the prime cause of this deficiency, though it is no doubt considerably increased by the cooling effects of the glaciers and snow-clad summits, the openings and exposures of the valleys, and other analogous causes. The plants of nearly all the different zones of Europe are thus found in Switzerland, from the vine, olive, and mulberry of the sunny valley, up to the herbaceous willow, the lichens, and mosses that struggle up to the confines of eternal snows.

The *inhabitants* are usually ranked under two races—the Germanic and the Græco-Latin: the former comprising the Deutsch or German Swiss of the northern and central cantons; the latter the French and Italian Swiss of the western and southern parts. The great majority of the population—say 1,600,000—are German, speaking the Deutsch language, which is indeed the language of the Confederation; the French are estimated at 450,000; the Italian at 121,000; the Romance, speaking a dialect of the Latin, 51,000; and the Jews 2000. According to the most recent authorities, the entire population is 2,372,920.

With respect to the *religion* of the Confederation, accounts are somewhat contradictory, but it is generally admitted that the Protestants number about 1,286,000; the Roman Catholics, 847,000; Jews, 2000; other persuasions making up the remainder. In some of the cantons the Roman Catholic faith is the only religion tolerated; in some Protestantism (chiefly Calvinistic) is equally exclusive; while in others there is no restriction whatever. *Educational* affairs seem to be better ordered; and most writers agree in regarding Switzerland, on the whole, as one of the best-educated countries in Europe—the proportion of pupils at school being as 1 to 9 of the population. The instruction of children from five to eight or ten years of age is compulsory; and for this purpose every district has an elementary school, independent of a secondary one for classical and scientific tuition. Besides these, there are normal schools for the training of teachers in several cantons; academies in the chief towns; the four universities of Basle, Zurich, Berne, and Geneva; certain public libraries, literary associations, and institutions for instruction in the arts.

The *productive industry* of the country is astonishing, considering its size and natural capabilities. Owing to its mountainous character, it is more pastoral than agricultural, and yet a considerable area is under tillage, yielding excellent crops of oats, barley, and rye. Wheat can scarcely be ranked as an object of culture; but maize, beans, lentils, potatoes, turnip, hemp, and flax are raised to some extent. It is in the management of the dairy that the Swiss chiefly excel—cattle, cheese, and butter being articles of export; and to this end the irrigation of meadow-land is perhaps better conducted than in any other part of Europe. The vine is cultivated in the valleys; and in some districts large orchards of apples, pears, and cherries, for the manufacture of liqueurs. In several of the *arts* and *manufactures* the Swiss exhibit great ingenuity and taste; but

most of these are conducted more in the cottages of the peasant landholder and shepherd than in independent factories. The branches which are most attended to will be best exhibited by an enumeration of their principal exports—namely, silks, cottons, lace, gloves, watches, jewellery, musical instruments, straw-plait, wooden vessels, cheese, butter, wine, and liqueurs.

As regards *government*, the twenty-two cantons into which the country is divided are united on equal terms in a confederation for mutual defence. The grand federal council or General Diet of Switzerland is composed of deputies from all the cantons, each sending two or three deputies, but exercising only one vote. This diet meets once a year, and sits every two years alternately in Berne, Zurich, and Lucerne. Its function is to treat with foreign powers, declare war, conclude peace, determine the amount of military force, regulate the finances of the Confederation, and other matters of common interest. Besides its statutory meeting, the diet can be assembled at any time on the request of five cantons; and when not sitting, its powers are so far delegated to the grand council of the directorial canton for the time being. In all judicial, ecclesiastical, and fiscal matters, each canton acts for itself as a free and independent republic, with the exception of Neufchatel, in which the king of Prussia exercises the right of sovereign. There is, strictly speaking, no standing army; but each canton has its militia, liable to be called out either for its own or the general service—the whole amounting to a force of 64,000 men. The federal expenses for administration, army, &c. amount to £30,000 annually, and are defrayed by the interest of certain capitals set aside for the purpose.

ITALY.

This is now merely a physical, not a political territory, its surface being partitioned into a number of perfectly distinct and independent states. It is partly peninsular and partly insular, lying chiefly between lat. 36° 35′ and 46° 40′ north, and long. 6° 40′ and 19° east. It is bounded on the north by Switzerland and Austria, from which it is naturally separated by the Alps; on the east by the Gulf of Venice; on the south by the Mediterranean; and on the west by the Mediterranean and France. Its area, including that of the islands, is computed at 122,800 square miles. The largest and most important of these islands are—Sicily and the Lipari group, belonging to Naples; Sardinia, to the kingdom of the same name; Corsica, forming one of the departments of France; Elba, attached to Tuscany; and Malta, possessed by Great Britain.

Superficially, Italy exhibits much diversity and beauty. Guarded by the Alps, its northern fringe exhibits all the features of the Swiss landscape; but this soon changes into scenery of the most opposite description—namely, the great plain of Lombardy, which extends along the base of these mountains for more than 250 miles, with an average breadth of 50, is flat and low, but fertile and well cultivated, and watered throughout by the Po and its numerous affluents. The only other mountain development is that of the Apennines, which, branching from the Maritime Alps in Genoa, range southward like a backbone or spine through the centre of the peninsula, bifurcating at Venosa into two minor ridges—the one forming the heel, the other the fore-foot of the fanciful boot. From the Apennines, which attain an extreme height of 9520 feet, the country slopes on both sides, intersected by streams and valleys, and terminating near the coast in flattish land—the largest extent of which is the 'Maremme,' lying between the Arno and Gulf of Gaeta, of variable breadth, but about 220 miles in length.

The principal *rivers* of the country, which, on the whole, may be regarded as well-watered, are—the Po, with its numerous Alpine tributaries, flowing through the great plain of Piedmont and Lombardy, and falling by several mouths into the Gulf of Venice—subject to destructive inundations, and, considering its volume and sluggish current, of no great use to navigation; the Adige, also flowing into the Gulf of Venice; the Tiber, with its small affluents, rising in the Apennines, and falling into the Mediterranean, navigable to Rome; and the Arno in Tuscany, navigable to Florence, and connecting with the Chiana, one of the tributaries of the Tiber, by means of a canal.

Geologically, Italy presents considerable difficulties, partly in consequence of the disturbance to which the formations have been subjected, and partly owing to the dubious character of some of the calcareous strata. Granite, primary schists, and limestones, occur in the Alps, in the northern extremity of the Apennines, and in their southern bifurcations. The great central range of the Apennines is said to consist chiefly of Jurassic limestones, occasionally broken through by older strata, flanked on the north by secondary rocks, and on the south, downwards to the Mediterranean, by recent tertiaries, replete with marine remains. Through these tertiary sandstones and marly limestones rise numerous volcanic hills, but lately extinct, or still in operation. This chain of volcanic action may be said to fringe the whole of the Mediterranean sea-board, from the Arno to Sicily—exhibiting numerous dormant craters, and the still active ones of Vesuvius (3200 feet), the Lipari Isles, Mount Ætna (10,870 feet), besides being accompanied by frequent earthquakes and subterranean convulsions. The principal mineral products of the country are—iron from Elba; the finest statuary marble from Carrara in Modena; sulphur from Sicily; alum and nitre from near Rome; alabaster from Tuscany; and in minor quantities copper, lead, ore, borax, salt, puzzolana, pumice, and bitumen.

The *climate* of Italy has been greatly extolled; but this is true only of certain localities, and under certain seasons. The temperature may be generally mild, the atmosphere of unexampled transparency, and the sky unclouded; but certain tracks, as the plain of Lombardy, Campagna di Roma, the Pontine Marshes, the Campagna of Naples, &c. are subject to the fatal scourge of the *malaria*, while the southern shores are occasionally visited by the pestilential and enervating sirocco and simoom. As respects temperature, it is usual to divide the country into four regions:—1. North of the Apennines, or the 44th parallel, where frosts are experienced in winter, and where the orange and lemon do not flourish in the open air; 2. The central regions, including Tuscany and the Papal States, where the vine, olive, orange, lemon, &c. flourish without culture, and where snow is only known on the mountain heights; 3. The middle districts of the Neapolitan territory, where snow is rarely seen on the Apennines, and where the finest fruits are found in the valleys throughout the winter; and 4. The southern provinces of Naples and Sicily, where the thermometer never falls to the freezing-point, and the sugar-cane, opuntia, and other tropical plants, luxuriate in the low lands.

The *vegetable* productions of northern Italy differ little from those of southern France, and the valleys of Switzerland, already described; the cultivation of rice, and the more extensive growth of the mulberry, being perhaps the main peculiarities. In southern Italy, the products, as indicated in the preceding paragraph, are more analogous to those of the south of Spain—receiving greater diversity from the successive stages of the Apennines, which are clothed in many places with forest growth to the very summit. Of *animals*, we may mention the wolf, wild boar, stag, fox, lynx, badger, marmot, crested porcupine; the quail, bustard, ortolan, and a variety of game; a number of snakes and reptiles; the tunny, mullet, anchovy sardel, and other fishes; the silk-worm, and the celebrated tarantula spider.

The *inhabitants* are described as 'a mixture of races, composed of Greeks, Gauls, Germans, Goths, Arabians, and many others, who have migrated into the peninsula at various times, and intermingled with the original population, whose language they have superseded. They have long been divided into numerous tribes and nations, with separate political and social interests,

and speaking dialects so different, that the inhabitants of one province can scarcely, if at all, understand the language of another.' What we denominate *Italian* is, however, the written language, used by the several governments, and spoken as a vernacular by all the educated classes. The basis of this is the ancient Latin, modified by the infusion of foreign elements.

The *Roman Catholic religion* is that professed in all the states, and by almost the whole population; the only exceptions being the Protestant Waldenses in Piedmont, the Greeks in the principal commercial towns, and the Jews, who are found chiefly in Rome, Leghorn, and Venice. Being the head and centre of the Papal power, it might be anticipated that the number of those officially connected with the church in Italy should be very great, though one would hardly expect that they were as 1 to 50 of the population—the proportion usually given by statisticians. *Educationally*, the country is one of the most neglected in Europe—the proportion of pupils to the entire population being as 1 to 50 in the Papal states; 1 to 53 in Lucca; 1 to 66 in Tuscany; and as 1 to 70 or more in the Neapolitan territory. The only state that enjoys anything like an elementary system is Lombardy, now under the Austrian empire; and there the proportion is said to be as 1 to 13.

The *productive industry* of Italy presents considerable variety, but is by no means so important as the natural capabilities of the country appear to warrant. Lombardy is the chief corn-growing state, and there *agriculture* and irrigation are conducted upon something like correct principles; in Genoa and Tuscany the culture of fruit is more attended to; the central parts are mainly pastoral; and in Naples and Sicily 'the abundance of vegetable productions is more owing to the climate and soil than to the industry of the husbandman.' The culture of silk, the vine, and olive, are three important branches, and in these the people exhibit considerable skill and industry. As in all Catholic countries, fish forms an important item of consumption; and consequently the tunny, anchovy, mullet, and other *fisheries*, are conducted upon an extensive scale. 'Italy is not distinguished,' says Macculloch, 'for *manufactures*; the chief are those of silk fabrics, silk thread, &c. which have their principal seat in Lombardy. Woollen and linen stuffs, straw-plait, gauze, artificial flowers, straw-hats, paper, parchment, leather, porcelain, gloves, essences, and musical instruments, are among the other goods manufactured; but, generally speaking, the raw products of the country form its chief exports, and most manufactured articles, whether of necessity or luxury, are imported from foreign nations.'

Politically, Italy is divided into a number of independent states, each having its own peculiar government, and all less or more of a despotic character. At present there are nine of these states; but on the demise of the Duchess of Parma, the Duke of Lucca succeeds to her estates, and Lucca is to be annexed to Tuscany. We may shortly enumerate—1. The kingdom of Sardinia, comprising the island of that name, the principalities of Piedmont and Nice, and the duchies of Genoa and Savoy. Monarchy absolute and hereditary; supported by a military force of 40,000 men, and a small navy. 2. Venetian Lombardy, which includes the ancient republic of Venice and the duchy of Mantua. This province now forms an integral part of Austria, and is under the administration of a viceroy, appointed by the emperor, by whose troops it is garrisoned. 3. The duchy of Parma, the government of which is also absolute, but paternal in spirit. 4. Modena, including the small duchies of Modena, Reggio, Mirandola, and Massa-Carrara. 5. Lucca, a small maritime duchy, occupying a corner of Tuscany, to which it is to be eventually attached. 6. Tuscany (anciently Etruria), a grand-duchy, consisting of one large unbroken territory, a detached portion on the confines of Parma, and the isles of Elba and Giglio; after Lombardy, the most industrious and well-conducted of the Italian states. 7. States of the Church, all lying contiguous, with the exception of St Benevento and Ponte Corvo, in the Neapolitan territory; ruled by the pope, as a secular prince; and as this prelate is elected from the college of cardinals, the government may be described as an elective monarchy. 8. San Marino, a small republic, forming an enclave of the Church States, and under the protection of the pope. 9. The kingdom of Naples—or, as it is sometimes called, The Kingdom of the Two Sicilies—comprehending the southern region of the peninsula, the large island of Sicily, and the Lipari Isles. The government is an absolute hereditary monarchy, supported by a force of 30,000 men, and a considerable navy.

TURKEY IN EUROPE.

The Turkish or Ottoman empire embraces a series of territories, situated partly in Europe, partly in Asia, and, if we consider its nominal connection with Egypt, partly also in Africa. A vast extent of the country thus indicated is, however, virtually independent: Egypt may be said to be wholly so; the Danubian regions of Moldavia, Wallachia, and Servia, are but slenderly related, and many of the tribes in Asiatic Turkey bear as little allegiance to the sultan as they do to the sovereign of Britain. It is to that portion of the empire generally delineated by geographers as 'Turkey in Europe' that we now confine our description. Lying between lat. 39° and 48° north, and long. 16° and 29° east, this territory is bounded on the north by Austria and Russia; east by the Black Sea, Sea of Marmora, and the Archipelago; south by Greece; and west by the Ionian and Adriatic Seas. The area thus enclosed is estimated at 180,200 square miles, exclusive of a few isles in the upper part of the Archipelago, and of the island of Candia in the Mediterranean.

Respecting the *physical aspect and construction* of the country little is known with accuracy—less, perhaps, than of any other section of Europe. The mountains which give diversity to the southern provinces are the Dinaric, Balkan, Candavian, Rhodope, and other ramifications of the Alpine system; the Eastern Carpathians form the only ridge in the north, and that merely as a boundary with Austria, in which they have their chief development. South of the Balkan range the surface presents considerable diversity—hill and glen, slope and well-watered valley; none of the latter being entitled to the character of *plain*, except those in Macedonia, Thrace, and Thessaly, which have been long celebrated for their beauty and fertility. The northern provinces, on the other hand, present extensive level tracts, inferior to none in Europe in point of size, and generally of the richest alluvium, unless where they degenerate into marshes skirting the Danube, as in Wallachia and Bulgaria. The *minerals* of economical importance are marble; iron, copper, lead, and silver ore; magnesia, meerschaum, and whetstones; but mining, unless in Bosnia, is little attended to.

As to *climate*, Turkey is generally said to be 'colder than the other countries of Europe lying within the same parallels.' In the flat provinces of the north the summer is hot and sultry; the winter, on the other hand, is severe, and snow lies for fully five months on the mountains. South of the Balkan, whose heights are annually covered with snow, the seasons are less marked; and though the weather is somewhat changeable, the climate of the valleys is delightful. In Croatia, Bosnia, and the adjoining provinces, the cereals and other cultivated crops can be raised in any quantities on the plains, while the mountain-slopes are clad with forests of oak, elm, and pine. South of the Balkan the country is covered with forests of the sycamore, plane, carob, box, and cypress; gardens of roses, jasmine, and lilac; vineyards and orchards of nearly all kinds of fruit-trees; but it is destitute of the olive, which, except in some favourable localities, does not thrive north of lat. 40°. The Flora of Albania is similar to that of the opposite coast of Italy: in Thessaly—the garden of European Turkey—the olive, vine, fig, pome-

granates, walnut, almond, orange, lemon, citron, cotton, tobacco, silk, &c. are reared in perfection; while blooming wildly are the hyacinth, narcissus, tulip, and other marvellings of our gardens. The principal wild *animals* are—the bear, wild-boar, wolf, jackal, fox, &c.; abundance of deer and game; a plentiful supply of fish, among which the sturgeon is peculiar; and the silk-worm, first reared in Europe at Constantinople about the middle of the sixth century.

The *ruling people* of the country are the Ottoman Turks, an offshoot from the Toorkee or Tartars of Central Asia, who, in the year 1453, conquered that part of the country lying within the confines of Europe. Intermixture with other races, and the physical conditions of place, have stamped them, however, with peculiarities not to be found in the existing Asiatic Mongols. The other inhabitants—more numerous in several provinces than the Turks—are the Greeks in Thessaly and Rumili; the Albanians in the west; the Croats, Bosnians, Servians, and other Sclavonians; the Wallachians and Armenians; Jews, Gipsies, and Franks. The Turks, and many of the Albanians, Bulgarians, and Bosnians, are Mohammedans or observers of the Koran ritual; the Greeks, Servians, and some of the Bosnians, belong to the Greek Church; the Jews adhere to their own ancient belief; while many in all of the provinces are Roman Catholics, or of no faith at all. 'In Turkey,' says a high authority, 'the great number of employments for which learning is necessary acts as a stimulus to the desire for education, and there is accordingly no want of schools, where the elements of knowledge—as spelling, reading, and the principles of grammar and religion—are taught. To all the imperial mosques are attached mudreses or colleges, where aspirants to legal or sacerdotal offices are instructed.' The reader must not be misled, however, by this statement: there are thousands in every province who never saw the form of a letter; nor can we, with our ideas of instruction, regard that as a liberal education which is restricted to the reading of the Koran and its commentaries, to the code of civil law, or to the studies of astrology and medicine as expounded by the Arabic writers of the ninth century!

Every branch of *industry*, says the 'Cyclopædia of Commerce,' is in a backward state in Turkey. Although there is a general recognition of the principles of free trade, yet in most parts power makes law, and there is no real security of property. The cultivators are congregated in villages, and *agriculture* is in a very rude condition; still, so great is the fertility, that there is a surplus of corn for exportation. The grains chiefly cultivated are—maize, wheat, rye, barley, oats, and buckwheat; the vine is grown in most of the provinces; and flax, hemp, saffron, cotton, tobacco, madder, &c. chiefly in the south. *Manufactures* appear formerly to have attained greater excellence than was to be expected; but of late years they have been depressed by foreign competition, and the domestic weaving of cotton stuff for family use, and some silks at Constantinople and Salonica, are now almost the only branches of consequence. In hardwares, the braziers and iron smiths of Shumla have acquired some celebrity; steel is manufactured at Bosna-Serai, and firearms at Semendria, Gabrora, and other places. *Commerce* is impeded by the want of roads; and almost all merchandise is conveyed throughout the country on horseback.

The *government* is an absolute monarchy or despotism, hereditary in the family of Osman, but restricted to males. The sultan, as caliph, or successor of the prophet Mohammed, unites the highest spiritual dignity with the supreme secular power. He has unlimited control over the property and lives of his subjects, from the meanest menial to the highest officer of state, whom he can remove or put to death at will. The only limit to his will is the Koran, or Book of Mohammed (see No. 76), which he is bound by his oath of office to observe; and this is in reality the source of all civil, political, or criminal law. In addition to the code of laws, the interpretations of the ulema, or priesthood, have great weight in the tribunals. The mufti is not only the chief of the priests, but the highest interpreter of the laws; and his decisions are collected and respected as precedents. For administrative purposes, the provinces and principalities are arranged into eyalets, and these again into livas or sandjaks, superintended by viziers, pachas, beys, and other officials. Population, 12,200,000; revenue, £2,550,000; debt, £7,600,000; army, 124,000. Capital, Constantinople, with 500,000 inhabitants.

GREECE.

This country, whose ancient history is so intimately associated with all that is refined and ennobling in human progress, occupies the south-east extremity of Europe, commonly distinguished as the Hellenic Peninsula. It is surrounded by the Mediterranean, except on the north, where it is bounded by Turkey, of which, till 1821, it formed one of the component sections. Its area is estimated at 15,000 square miles, of which not more than two-fifths are susceptible of cultivation.

The *physical aspect* of the country is decidedly mountainous and rugged; its hills, though seldom rising above 5500 feet (Liakoura in the Parnassus is 8068 feet, and St Elias in the Morea 7900 feet), being so abrupt and craggy as to assume an appearance more majestic and imposing than many others of double the altitude. Rising and radiating in every direction, the hills occupy fully three-fifths of the surface, leaving the remainder in narrow defiles, glens, and basin-shaped valleys, which respectively formed the sites of the numerous petty states into which ancient Greece was divided. The mineral products are—marble of various colours, porphyry, slate, coal, gypsum, sulphur, alum, asphalte, zinc, lead, iron, gold, silver, copper, manganese, and cobalt; none of which, however, are obtained in important quantities.

Considerable *diversity of climate* is experienced, in consequence of the varied altitude of the country, and the manner in which it is intersected by bays, gulfs, hills, and valleys. No portion reaches the snow-line, but snow annually falls on the higher hills, where it often lies for weeks together. Winter may be said to be confined to December and January; spring and autumn are marked by heavy rains, usually accompanied by tempests and thunder-storms; but throughout the whole summer, of full six months' duration, a cloud is seldom to be seen; and though the temperature often exceeds 100° Fahrenheit, yet the tempering influence of the sea-breeze prevents the heat from being oppressive. The vegetable and animal products of continental Greece are quite analogous to those of Southern Italy and Turkish Thessaly, already described, with this difference, that the ascending zones of vegetation are narrower, and more decidedly marked, from the vine and olive of the sunny valley to the beech and pine of the mountain.

The *dominant people* are the Hellenes or Greeks, who chiefly inhabit the eastern and central parts, and who boast of descent from the aboriginal *Graioi* or *Graikoi*. Their language is the Romaic, a modernised form of the ancient Greek, to which it bears a much closer resemblance than the Italian does to the Latin. The other inhabitants are Albanians, occupying the greater part of Livadia and the western part of the Morea; and Mainotes, in the south of the peninsula, who boast of descent from the ancient Spartans. The established or national religion is that of the 'Orthodox Oriental Apostolic,' or Greek Church, having the sovereign for its head, and governed by a holy synod, consisting of seven members annually elected by the dignitaries from their own number. The only other ritual observed to any extent is that of the Roman Catholic, and this more especially in the islands. *Educationally*, Greece promises well, though at present not one-eighth of the children receive any instruction whatever. By an edict which is gradually taking effect, a number of elementary schools and higher gymnasia are to be established and maintained out of the revenue of the former mo-

histories—and of these seminaries upwards of forty are now in operation.

The *productive industry* of the country differs little from that of the southern parts of Turkey, already described. Agriculture is in a very primitive condition; but the fine soil of the valleys enables the inhabitants to reap excellent cereal crops, which are ripe about the end of June. The vine and currant-grape are extensively cultivated; the other fruits are more the gift of nature than the results of culture. The manufactures are mostly domestic, and quite inconsiderable; fishing is largely carried on; and the extent of their commercial intercourse with the neighbouring countries of the Levant is said to employ 4500 vessels, navigated by upwards of 16,000 men.

The *government* is a constitutional, though nearly a despotic, monarchy. Greece formed a part of the Turkish empire till 1821, when the people revolted, and after a long and severe struggle, succeeded with the aid of England, France, and Russia, in achieving their independence. The country was accordingly formed into the new kingdom of Hellas, and Otho, a prince of Bavaria, appointed king. The Council of State is composed of three vice-presidents, seventeen councillors in ordinary, and fourteen special councillors. Subsequently, Athens was declared the capital, and the country divided, for administrative purposes, into twenty-four *nomoi* or governments, and seven sub-governments. National debt about £4,286,000; revenue, £527,000; expenditure, £600,000. Army, 3800; navy, 32 vessels, of all sizes, manned by 2000 hands.

Ionian Islands.

The *Ionian Islands*, situated on the west and south coasts, were formed in 1815 into an independent republic or oligarchy, under the protection of Britain, by whose troops they are garrisoned. The principal islands are Corfu (which, as the key to the Adriatic, has always been of considerable political importance), Kephalonia, Zante, Santa Maura, Thiaki or Ithaca, Cerigo, and Paxos, containing an area of 1041 square miles, with a population of 222,000. The government is vested in a high commissioner, residing at Corfu, who represents the British sovereign; a legislative assembly of twenty-nine members, elected partly by the nobles and partly by the commissioner; and a senate of five members, elected by the legislative assembly, with a president appointed by the commissioner. The army, the police, and the *sanità*, or health establishment, are under the sole direction of the high commissioner. These islands exhibit in miniature, both physically and industrially, the chief features of the mainland.

AUSTRIA.

The Austrian empire occupies a large portion of central Europe, and consists of an aggregation of kingdoms, principalities, and duchies, acquired at various times by treaty or by conquest. To the archduchy of Austria, the nucleus of the whole, there have been added since the end of the thirteenth century the kingdom of Bohemia, Moravia, part of Silesia, Styria, Illyria, Tyrol, Auschwatz, and Zator in Galicia—all belonging to the Germanic confederation; Galicia, one of the partitions of Poland; Buckowina, formerly part of Moldavia; the kingdom of Hungary (including Croatia, Sclavonia, and the Military Frontier); the principality of Transylvania, which had been connected with Hungary for many centuries; and lastly, Venetian Lombardy, attached so recently as 1815. This vast territory, though thus composed of a heterogeneous assemblage of tribes and nations, lies compactly together, and is situated between lat. 42° and 51° north, and long. 8° 30′ and 26° 30′ east. Its area is estimated at 257,368 square miles, of which 75,822 are occupied by the provinces included under the German confederacy; aggregate population, 35,804,152.

The *natural features* of the empire, exclusive of Lombardy, already described under Italy, exhibit wide and well-marked diversity of hill and plain. The mountain-ranges are bold and continuous; the plains are amongst the most extensive in Europe. Of the former, the principal are—the Alpine development of the Tyrol, which, under the title of the Carnic, Julian, and other ridges, diverge into Illyria and Styria; the eastern and western Carpathians, which encircle the whole of Hungary and Transylvania north of the Danube, ramifying into the minor chains of the Jablunka, Little Carpathians, &c.; and lastly, the Riesen-gebirge, Erzgebirge, and Böhmerwald ranges, which, enclosing Bohemia, form the boundary with Saxony and Bavaria. In the western or Germanic provinces of the empire there are a number of fine valleys, watered by such rivers as the Inn, Enns, Moldau, March, Muhr, and Drave; while in Galicia and Hungary expand some of those vast plains which give character to this region of Europe. The most remarkable of these is that of Middle Hungary, traversed by the Danube, the Theiss, Drave, and Maros, and said to comprise an area of 35,000 square miles.

The country abounds in *minerals*; but its capabilities are far from being developed. Gold and silver are mined in Hungary and Transylvania; quicksilver at Idria in Carniola; the supply of iron is immense; lead and copper are abundant; tin, calamine, zinc, cobalt, antimony, bismuth, manganese, and almost every other metal, can be procured. There are also abundant supplies of rock-salt, as at Wielicska; marble, coal, alum, saltpetre, and sulphur; clay for the finest porcelain; quartz for glass; and most of the precious stones. Connected with its geology, we may notice the *mineral and thermal springs*, of which nearly a hundred are annually frequented by visitors from all countries.

In point of *climate*, the country is generally divided into three regions. 1. The southern, extending from lat. 42° to 46° north, where the depth of winter resembles the month of March in northern countries, and where are found the vine, fig-tree, olive, and myrtle. 2. The middle region, from lat. 46° to 49° north, where the olive is not found, but where maize and vines thrive in favourable situations. Here winter lasts from three to four months; summer is warm, but variable; and the air is salubrious, except in the vicinity of the Hungarian marshes. 3. The northern zone, extending from lat. 49° to 51° north, where winter is severe, and lasts fully five months; where vines and maize are no longer met with, and where wheat requires a favourable situation. Under these various climatic influences, and with a generally fertile soil, Austria possesses most of the cultivated grains and fruits; while in her extensive forests flourish all the timber-trees known in England. Among the wild animals may be noticed the brown bear, wolf, lynx, roe, red and fallow-deer, the ibex, elk, urus; wild boar, and herds of rather diminutive horses, which range uncontrolled in the plains of Hungary; a variety of game birds, the golden and other eagles, herons in vast flocks; the land tortoise; leeches, which supply the greater part of Europe; the blistering fly; and the bee, whose wax and honey yield a large annual revenue; with the silkworm in Venetian Lombardy and the lower district of the Tyrol.

The *population*, which consists of several distinct races, is arranged by the best authorities in the following proportions:—1. About 18,000,000 are of Sclavonic extraction, and are found in Illyria, the eastern parts of Styria, the archduchy of Austria which borders upon Hungary, in some parts of Hungary, Bohemia, Moravia, Transylvania, Dalmatia, and the Military Frontier. 2. The Germans number about 6,300,000, and form an integral part of the population in the archduchy, Styria, Carinthia, the Tyrol, Moravia, and Bohemia; but constitute separate communities in Hungary, Transylvania (where they are denominated Saxons), Galicia, the Military Frontier, and in the Venetian territories. 3. The third race are the Magyars, 6,300,000, who are esteemed of pure Asiatic extraction, and form the majority of the inhabitants of Hungary and Transylvania. 4. The Italians, 4,760,000, constitute nearly the entire population of Venetian Lombardy and the south of the Tyrol. 5. The Wallachians, a medley of ancient Thracians, Romans, and Sclavonians, 1,900,000, chiefly

found in Transylvania, Hungary, and Buchowina. 6. The Jews, 652,000, principally residing in Galicia, Hungary, and Moravia. 7. The Gipsies, Arnauts, Greeks, Armenians, &c. numbering in all about 100,000.

The *dominant religion* of the empire is Roman Catholic; but the Greek United Church and the Armenian Catholic Church have also their dignitaries and establishments. Protestantism is in most parts of the empire only tolerated; though in Hungary and Transylvania the members of that faith enjoy endowments and equal privileges with Catholics. Unitarianism has been long prevalent in Transylvania; the Jews adhere to the mosaic ritual; and many of the Germans now openly profess a sort of deism or rationalism. In reference to *elementary instruction*, Austria (with the exception perhaps of Hungary and Dalmatia) has recently taken a high position, and is still doing all in her power to maintain it. Every child, from five to thirteen years of age, is compelled to attend school, and there receive general instruction. It is also ordained that no person shall enter the marriage state who is not able to read, write, and cast accounts; that no master of any trade shall, without paying a heavy penalty, employ workmen who are unable to read and write; and that small books of a moral tendency shall be distributed at the lowest price to all subjects of the empire.

Industrially, Austria is yet more an agricultural and pastoral than a manufacturing country. It furnishes wheat and other bread-corns in abundance; fruits, wine, hops, hemp, flax, tobacco, saffron, and dye-stuffs; hides, horns, wax, honey, silk, and other animal produce. As already mentioned, silk is largely manufactured in Lombardy; and latterly considerable encouragement has been given to manufactures in cotton and linen in the southern provinces; while Bohemia and Moravia have long been celebrated for their manufactures in woollens, leather, glass, hardware, and firearms. The *mineral* produce has been already adverted to; and, *commercially*, Trieste, Fiume, and Ragusa are rapidly rising into importance. The means of transit for trade and general intercourse have also of late years been greatly extended. Austria now possesses magnificently-constructed roads, leading throughout the chief provinces; has several well-kept canals of considerable length; has five or six long lines of railway; and these in addition to the great navigable rivers, the Maros, Theiss, Drave, and Danube—the last of which has been open to steam-navigation since 1822.

The *government* of Austria is a pure despotism (we speak without reference to the present (1849) unsettled state of the country), under a hereditary emperor and a ministry of his own appointment. Generally, the provinces have each a species of local parliament, consisting of the nobles. In imperial legislation and finance, none of these provincial bodies has any voice, the emperor being the maker of all the laws for his subjects. They meet annually, and their main duty is to receive projects of taxation from the crown, and to allocate the imposition over their respective districts. There are, however, some exceptions to the stringency of despotic power: in Hungary, nothing can be decreed by the sovereign without the concurrence of the Diet, as it is called, or provincial assembly; Transylvania has a separate Diet, but sends members to that of Hungary; and in Tyrol there is a species of representation. The emperor, in virtue of the states already mentioned, is a member of the German Confederacy, in the Diet of which he exercises four votes, and enjoys, besides, the right of presiding. Army about 406,000 men; national debt, £86,310,000; revenue, £15,000,000 sterling. The capital city is Vienna, with a population of 375,884.

GERMANY.

Germany, as it is called by the English, l'Allemagne by the French, and Deutsch or Teutschland by the natives themselves, is a vast territory, extending from the Baltic Sea on the north to the Gulf of Venice, Italy, and Switzerland on the south; having Prussian Poland and Hungary on the east, and France, the Netherlands, and German Ocean on the west. This region, occupying an area of 246,000 square miles, is composed of a number of states, independent as regards their interior administration, but by the treaty of Vienna united into one body, called the Germanic Confederation, which, by means of a federative diet, professes to maintain the peace and security of the whole. Under this confederacy are included not only the confused aggregation of small principalities and duchies, but also the greater part of Prussia, the western provinces of Austria, parts of Limburg and Luxemburg in the Netherlands, and Holstein and Lauenburg in Denmark. The following description, however, will be directed more especially to the states forming the region commonly known as Germany, and to the condition of these states previous to the existing (1849) attempts at political consolidation.

With regard to *physical configuration*, the country may be divided into two regions—the northern and southern, separated from each other by the irregular hilly band of the Fichtel Gebirge, Rhon Gebirge, &c. which forms at the same time the great water-shed of the country. The northern region is almost entirely level, including vast tracts of heath and light sandy soil in the north-east, and swamps and marshes in the north-west; while the coast is in some places so low, as to require dikes to defend it from the sea. In this division, the soil, except in Saxony, is in general poor, but not unsusceptible of improvement. The southern portion is more diversified, presenting several long ranges of hills, counterbalanced by the extensive plains of Wirtemberg and Bavaria, from 950 to 1400 feet above the sea-level. Here also the land is superior, and in many districts extremely fertile. In the central hilly band, and westward towards the Rhine, there are many fine river-valleys, verdant, well-wooded, and not devoid of picturesque beauty. Indeed no country in Europe is better watered than Germany, being traversed by several hundred rivers, four of which are of the first class, and about sixty less or more navigable.

The *rock formations* which give character to the country begin with the granitic and primary developments of the Alps and Böhmerwald, and terminate with marine and alluvial deposits of recent origin. Of the metals and minerals sought after and obtained in Germany, we may mention—gold and silver from the Erze (ore) and Harts mountains, iron, copper, tin, lead, cinnabar, cobalt, bismuth, antimony, and zinc; coal, rock-salt, sulphur, alum, saltpetre, marble, alabaster, gypsum, lithographic slate, roofing-slate, lime, and a variety of building stones; calcedonies, agates, amethysts, and other precious stones.

The *climate* of Germany is said to be 'less variable than the nature of its mountain system, and the ranges of latitude within which it lies, would lead us to imagine; and its vegetation resembles in its general character that of England, or the north of France.' The *vegetable* products of prime economical importance are — the usual bread-corns, maize, buckwheat, pulse, potatoes, turnips, cabbage, hemp, flax, hops, rapeseed, madder, aniseed, mustard, &c.; all the garden fruits in great profusion; and the vine in favourable situations south of lat. 51°, but most successfully on the banks of the 'wide and winding Rhine,' on the Maine, Neckar, Moselle, and Danube. The extensive forest growth, which forms one of the peculiar features of Germany, supplying the inhabitants with fuel and timber, as well as with an article of export, consists principally of oaks, beeches, firs, pines, larches, elms, alders, and birch. Among the domesticated animals, we may particularise the Holstein and Friesland breeds of the horse and ox; the merino sheep of Saxony; and the swine of Bavaria and Westphalia.

The *people* of this portion of the Confederation are mainly of Germanic, Teutsch, or Gothic origin, speaking various dialects of the high and low Dutch; but using, as a written medium, the well-known high Dutch or German language. The other inhabitants are—the

French on the Rhine; some Sclavonians in the east; and a number of Jews in the principal cities. Catholicism and Lutheran and Calvinistic Protestantism divide among them the great bulk of the people, the chief exceptions being the Jews and Rationalists—the latter having greatly increased within the last ten or fifteen years. '*Educationally*,' says a standard authority, 'no part of Europe enjoys advantages equal to Germany, especially the northern part of it. The parochial schools are so general, that none but the wilfully ignorant, or those of imperfect faculties, can be unacquainted with reading, writing, and the first rules of arithmetic. The schools for classical instruction, denominated gymnasiums, pedagogiums, and lyceums, are found in almost every large town, and dispense learning at a very cheap rate. The universities are sufficiently numerous (nineteen within the entire Confederation), and well endowed to provide instruction in the higher branches of knowledge upon terms nearly, if not altogether, gratuitous.

Industrially, the Germans are a thrifty, plodding people, and to this spirit are they mainly indebted for the position they have acquired in the arts and manufactures. Their agriculture and husbandry—the produce of which has been already noticed—are of a tidy and domestic character; not conducted, as with us, upon a large scale, but in small 'hofs,' which are profitably and skilfully managed. The products of their *river fisheries* have also been mentioned, as well as that of their *mines*, which have been long conducted upon correct and scientific principles. The principal *manufactures* are those of linen and thread in Silesia, Bohemia, Westphalia; of woollen goods in Saxony, Lower Rhine, Silesia, Brandenburg; of silk, leather, cotton goods, and lace in the Erz-gebirge; of tapestry, paper, and glass in Bohemia and Silesia; of mirrors near Nuremburg; of china at Berlin, Meissen, and Vienna; of delf ware in various places; of jewellery at Berlin and Augsburg; of iron wares in Westphalia and the Rhenish countries; of firearms and sword-blades at Spandau, Potsdam, &c.; of cannon at several capitals; of gunpowder, tobacco, artificial flowers, straw-hats, musical and other instruments; of wine, beer, brandy, liqueurs, vitriol; of books, which is one of the most extensive trades in the Confederation; and to these we may add smoked and salted provisions. *Internal communication* is carried on chiefly by the large rivers already mentioned; but partly also by several important canals, and recently by some first-rate lines of railway.

With respect to *government*, it has been already stated that the component states are independent as regards their interior administration, which is generally of an absolute kind; but, by the treaty of Vienna, are united into one body, which, by means of a federative Diet, professes to regulate the common interest. The ordinary business of this Diet is transacted by a permanent minor council or committee, composed of seventeen votes, of which eleven principal states—namely, the Austrian empire, the kingdoms of Prussia, Bavaria, Saxony, Hanover, Wirtemberg, Grand Duchies of Baden, Hessen-Darmstadt, Luxemburg, Electorate of Hessen-Cassel, and Duchy of Holstein—have each one, and the other twenty-seven only six votes; but when weigh y affairs are under consideration, the Diet forms itself into a general assembly or *Plenum*, which contains sixty-nine votes. The members convene at Frankfort-on-the-Maine; and the presidency is vested in Austria. The Confederate army, when assembled, consists of more than 300,000 men, furnished by the respective states in the proportion of 1 soldier for each 100 inhabitants for the active army, and of 1 soldier for each 200 of the inhabitants for the army of reserve.

HOLLAND.

This is one of the secondary kingdoms of Europe, lying along the south-eastern shores of the German Sea, which, from their uniformly low and level character, are generally known to geographers as the Netherlands. Its area is estimated at 11,[illegible] square miles, or 13,[illegible], if we include the portions of Limburg and Luxemburg, represented by the king, as grand duke, in the federative Diet of Germany.

Superficially, the whole country, saving some slight elevations in Gelderland, Utrecht, and Overyssel, forms one unbroken flat, without a hill or rock, without forests, or, except in the south part, running waters; the land consisting mainly of moor, marsh, and meadow-land, traversed by numerous canals, which, while they are absolutely necessary to drain it, and render it fit for cultivation, answer for the most part the purposes of roads—many of them being navigable for large vessels. To describe its surface, however, merely as a low unbroken flat, is not all; in many places its level actually falls from twenty to forty feet below that of the sea, against which it is protected partly, as in Zealand, Friesland, and Gelderland, by enormous dikes, and partly, as between the Helder and the Hook of Holland, by sandhills or *dunes*, cast up by the ocean upon the shores. To preserve these dikes and dunes by artificial facings, and plantings of bent and scarpine, is one of the chief cares of the government; and yet, in spite of every precaution, large tracts have several times suffered from inundations. The *geology* of the country is thus entirely limited to the most recent marine and river deposits—consisting of clay, sand, mud-silt, and peat-moss—from which the only economical products obtained are—potters' clay, fullers' earth, and peat for fuel.

The *climate*, as might be expected from the situation and lowness of the country, as well as from the number of water-courses which intersect its surface, is generally moist and foggy. In winter, Holland experiences a much lower temperature than the opposite coast of England—the river mouths and canals being covered with ice often for three months together; while in summer, though the nights are generally cold, the day-heat is far above that experienced even in the most southerly part of our island.

The natural *vegetation* is of the scantiest description: there are no forests, and only a few plantations of oak, beech, and elm, clumps of pine on the links or sand-drift, and rows of willow and poplar along the banks of the canals. The principal cultivated plants are—oats, rye, and buckwheat; barley, wheat, and the leguminous crops in smaller quantities; potatoes, flax, hemp, tobacco to a considerable extent; madder, rape-seed, chicory, mustard, and beet; tulips, hyacinths, lilies, dahlias, and other garden flowers, for which the country around Haarlem has long been celebrated. There is nothing peculiar in the breeds of the domesticated *animals*; and the only wild ones deserving of notice are—hordes of rats and mice, which infest the cultivated grounds; frogs and other reptiles, which swarm in the canals; and the stork, which annually visits and breeds in the country, where it is specially protected for its valuable services in ridding the waters of their reptile exuberance. Water-fowl, wild and tame, abound in all the provinces; and the adjacent sea-banks swarm with herrings, cod, sole, ray, turbot, and other flat fish.

Of the *inhabitants*, about three-fourths are Hollanders or Dutch, speaking a variety of the German language known nowhere else in Europe; the remainder being the Frisons in North Friesland, the Germans in Luxemburg and Limburg, the Walloons or Flemings in Limburg, and about 50,000 Jews established in the principal towns. As to *religion*, the majority of the people are Calvinistic Protestants, with a regularly-constituted clergy; the minority consisting of Lutherans, Mennonites, Remonstrants, Roman Catholics, and Jews. There is, however, no dominant sect in the country: all forms of faith and ritual are alike tolerated; the clergy are indiscriminately maintained by the state; the universities are upheld in the same manner, and these are open to students of all sects, whose theological studies are conducted under professors of their own creed. The system of public *education* adopted in Hol-

land has been much and deservedly celebrated—being, upon the whole, one of the most complete in Europe relative to the establishment of schools, the appointment of teachers, and the course of instruction. The whole is under the superintendence of the minister of the interior, assisted by an inspector-general, from whom all changes, and new regulations, and the immediate working of the system, is deputed to local inspectors and boards of management. No teacher is allowed to exercise his profession until he has received a certificate of general qualification, nor to be appointed to any school until his fitness for that particular charge has been ascertained. The better-class schools are conducted by teachers at their own risk, but even these are not permitted without the sanction of the board. The next class are the Tuscchen for tradesman's children, who pay a small fee; and beneath these are the Armen or poor schools, in which the instruction is wholly gratuitous.

Industrially and *commercially* the Dutch have long been celebrated: the conversion of a worthless seamarsh to a fertile country is evidence of the one feature; the extensive possessions which they at one time enjoyed in both hemispheres is proof of the other. At present their condition is somewhat stationary; their immoderate self-esteem, the tenacity with which they cling to established forms, and the tardiness of the national mind to comprehend and adopt improvements, having thrown them somewhat behind the adjacent countries. The nature of their *agricultural* produce has been already adverted to; and the careful, cleanly style in which they cultivate the soil and manage their dairies, as well as the manner in which they embank and drain their low plots or *polders*, are beyond all praise. The *fisheries*, once a principal source of wealth, have greatly declined; and *commerce*, in which the Dutch have always been pre-eminent, though vastly inferior to what it was in the seventeenth and part of the eighteenth centuries, is still a chief source of national wealth and employment, though likely again to suffer from the utter incapability of the country to compete in steam-navigation. The chief *manufactures* are those of woollen in Leyden and Utrecht; silks in Utrecht, Haarlem, and Amsterdam; cottons at Haarlem; tobacco-pipes at Gouda; and paper, leather, sugar-refining, painters' colours, and cordage, at various other places. The distilling of gin is extensively conducted at Schiedam; and ship-building at the ports of Rotterdam and Amsterdam.

The *government*, since the establishment of peace in 1815, has been a constitutional hereditary monarchy. The legislative power is vested in the sovereign and the States-General, which consists of two chambers—the upper of from 40 to 60 members, elected for life by the king; and the lower of 116 deputies, chosen by the people of the provinces every three years. Population, 3,414,374; revenue, £5,822,000; national debt, £101,462,000; army, 24,000; capital, Amsterdam, with a population of 220,000.

BELGIUM.

The Belgic provinces, which were united with the Dutch provinces under the Spanish dominions in 1548, continued after the revolt of the former to belong to Spain until 1717, when they were ceded to Austria, and were thence usually termed the Austrian Netherlands. During the usurpation of Napoleon, they were incorporated with France; but in 1815 they were separated from that kingdom, and united with the Dutch provinces, to form the kingdom of the Netherlands. Differing in religion and language, and finding their interests as a manufacturing people not always coinciding with those of the commercial provinces of the north, the Belgians in 1830 seceded from the Netherlandish monarchy, declared themselves an independent state, and in 1831 made choice of a king. Subsequently the limits of their territory were determined by the Five Great Powers, and thus Holland and Belgium became separate kingdoms. Situated between lat. 49° 27′ and 51° 31′ north, and long. 2° 37′ and 6° east, it is consequently bounded on the north by Holland; east by Rhenish Prussia; south by France; and west by the German Ocean. Area, 11,331 square miles.

Superficially, the northern and western provinces of Belgium, in their flatness, fertility, dikes, and canals, may be regarded as a continuation of Holland—with this difference, that in no part does the surface fall beneath the level of the sea. 'The south and east provinces have an opposite character; they are generally more thinly peopled, less cultivated, and exhibit an irregular hilly surface, with tracts of marshy land and extensive forests. With the exception of these hilly districts, and some light sandy soils in the west, the whole territory presents a series of nearly level plains, traversed by numerous streams—the affluents of the navigable rivers Meuse, Sambre, Dender, Scheldt, Lys, &c.—delightfully diversified by woods, arable lands, and meadows of brilliant verdure, enclosed by hedgerow trees, and thickly studded throughout with towns and villages.' The *geological* formation of the flat district is precisely similar to that of Holland; but in the hilly provinces of the south and east very profitable developments of anthracite-coal, limestone, and red sandstone overlie primary schists, and these again are incumbent on porphyry, quartz, and granite. The chief mineral products of Liege, Namur, Hainault, and Luxemburg are—coal, iron, lead, copper, and zinc; besides which may be mentioned manganese, calamine, alum, various kinds of stone, slate, marble, whet-hones, and porcelain clay. Of the *mineral springs* arising from these formations, the most celebrated are those of Spa—whose waters are annually visited by thousands, and sent besides, in bottles, to all parts of Europe.

The *climate* resembles that of the south-east of England, but is, on the whole, more humid and variable; some districts, moreover, as Flanders, being at certain seasons rendered unhealthy by noxious exhalations from the water-courses and low polder lands. The *vegetation*, both natural and cultivated, is precisely the same as that of England and the north of France. The domesticated animals, if we except the excellent draught-horse of Flanders, are decidedly inferior to those of Holland and Germany.

The *inhabitants* are usually classed under two stocks—the Germanic and Greco-Latin. The former embraces the Belgians or Netherlanders, speaking the Flemish tongue, and a small number of German-Dutch in Limburg and Luxemburg. To the latter belong the Walloons of the southern provinces, who speak the French-Flemish and the Walloon—two uncouth primitive dialects of the French language. All *religions* are tolerated, but the Roman Catholic is that established in connection with the state, adhered to by nineteen-twentieths of the population, and administered by a regular priesthood, including one archbishop, five bishops, 165 curés, and not less than 4400 inferior clergy. Until the revolution of 1830, the Belgic provinces, as part of the Netherlands kingdom, enjoyed the same *educational* system as that described under Holland; but since that period a vast falling off is said to have taken place, especially among the lower orders, in consequence of government having abandoned all supervision and compulsion.

At present, the *industry* of Belgium is happily distributed between agriculture, mining, and manufactures; and under a continued peace and liberal government, bids fair to attain its ancient superiority. The Belgian or Flemish system of agriculture is well known over Europe for its minute and careful management; and no people understand better the method of collecting and preparing every species of manure, without which much of their sandy soil would be next to worthless. The *fisheries*, both inland and maritime, are rapidly increasing, principally, however, under a system of national bounty; and *mining* is carried on in a regular and efficient manner—that of coal employing about [illegible],000 hands, and the quantity of crude iron-ore raised being upwards of 10,000,000 tons. The most important

manufactures are—woollen cloths, as at Verviers, Liege, Dalhem; carpets at Tournay; linens at St Nicholas, Ghent, Termonde, &c.; cotton goods, employing about 122,000 hands, at Ghent, Antwerp, Mechlin, and St Nicholas; superb lace at Brussels and Mechlin; ribbons at Antwerp, Tournay, Ypres; hosiery employing about 50,000 hands, in various places; metallurgy at Charleroi, &c.; steam-engines, firearms, and machinery at Liege; hardwares and cutlery in various localities; porcelain at Sept-Fontaines, Brussels, &c.; glass at Namur, Liege, and Charleroi. The internal communication of the country is carried on by means of the rivers already noticed, a number of well-kept canals, good macadamised roads, and a national system of railways.

The *government*, as established in 1831, is a constitutional, hereditary monarchy, vested in the person and family of Leopold, Prince of Saxe-Coburg. The legislative power is exercised collectively by the king, senate, and house of representatives—the members of these chambers being elected by those citizens who pay not less than twenty florins (33s. 3d. sterling) annually in direct taxes. The number of representatives are as 1 to 45,000 inhabitants; the senators half as many as the representatives. The former are elected for four years, one-half retiring every two years; the latter for eight years, one-half retiring every four years. The chambers assemble of their own right annually in November, but the king has the right of convoking, adjourning, or dissolving them at pleasure. The executive is exercised by the sovereign, assisted by six responsible ministers—namely, of police, of the interior, foreign affairs, public works, war, and finance. For administrative purposes, the country is divided into nine provinces, and these again into arrondissements, communes, and cantons, after the model of France. Population, 4,298,562; revenue, £4,520,000; debt, £24,600,000; army, 32,000; capital, Brussels, with a population of 106,000.

DENMARK.

This small but ancient kingdom occupies that peninsular and insular portion of Europe betwixt the German Ocean and the entrance to the Baltic Sea; and lies between lat. 55° 28′ and 57° 42′ north, and long. 8° 10′ and 12° 38′ east. The territory consists of *Jutland*, or the kingdom of Denmark Proper, which includes Zealand, Funen, Laaland, Falster, Moen, Langeland, Bornholm, and a number of smaller islands in the Baltic; the duchy of *Sleswick*, which comprises some adjacent islands* on both coasts; and the duchies of *Holstein* and *Lauenburg*, which the king represents in the federative Diet of Germany. The aggregate area of the peninsula and islands is estimated at 21,856 square miles.

Superficially, both the peninsular and insular portions are low and flat; in many places rising little above the sea, and requiring the protection of mounds and dikes; and in no portion exceeding an altitude of 1000 feet. In Holstein, Sleswick, and the south of Jutland, the soil is for the most part extremely fertile, but little interrupted by marshes, and only occasionally light and sandy in the central districts. In the north and west of Jutland, on the other hand, large sandy tracts are prevalent, partially covered with bent, heath, and juniper, and utterly unavailable for culture. The soil of the islands is composed of calcareous sand and clay, which, though inferior in point of fertility to the meadows of Holstein, is, upon the whole, of average quality. The whole country, like Holland, is of recent marine formation, and consequently presents no rocks of economical value.

The *climate*, in consequence of the low-lying nature of the land, and the proximity of the surrounding seas to its most central portions, is, on the whole, much milder than the latitude would indicate. The distinguishing characteristics are humidity and changeableness. The indigenous vegetation is very scanty; there are now no forests, and what plantations exist, contain but an indifferent growth of birch, alder, ash, and beech. All the common grasses, rye, wheat, oats, potatoes, hemp, flax, and rape-seed, are raised in Denmark; in the duchies, hops and tobacco; and in several of the islands are large orchard-growths of apples, pears, cherries, and hazel-nuts. The characteristic features in the domesticated species are—the heavy Holstein breeds of the horse and ox; herds of fine porkers; and poultry in greater abundance, perhaps, than in any other country of Europe.

The *people*, with the exception of the Jews in Altona and Copenhagen, are of Teutonic origin, but belong to four different stocks—namely, the *Danes*, who constitute the majority, inhabit Jutland, Sleswick, and the islands, and speak a modernised form of the old Norse language; the *Germans* in Holstein and Lauenburg; the *Frisians* in the islands of Sleswick; and the *Angles* (a tribe of whom gave the name to England), found chiefly on the Baltic coast of Sleswick. Lutheranism is the established *religion* of the state, and is professed by almost all the people; but the fullest toleration is given to other creeds. '*Education*,' says Mr Macculloch, 'is very widely diffused, there being very few persons, even among the lowest classes, who are unable to read and write. Besides the universities of Copenhagen and Kiel, there are gymnasia or colleges at Sorö and Altona, with grammar-schools and academies in all the considerable towns. Parochial schools, chiefly conducted on the Lancasterian system, are almost everywhere established, there being upwards of 4000; and here, as in Prussia, attendance at school is not optional; for, by a late law, all children from the age of 7 to 14 years must attend some public school, and if unable to pay, are educated at the public expense.'

Industrially, Denmark is more an agricultural than a manufacturing country, and perhaps more pastoral than agricultural. In embanking, draining, and the preparation of pastures and meadows, the inhabitants of the duchies show considerable skill—raising not only abundance for home consumption, but large supplies for export. The *fisheries* are also of considerable importance—the principal being the herring-fishery off Jutland, and that of cod in the North Sea. The government has afforded great encouragement to *manufactures*; but in no department (unless under the protection of exorbitant duties) can the people compete with foreigners, even in their own markets.

The *government* is a hereditary monarchy, formerly absolute; but in 1834 representative assemblies, with a consulting voice, were instituted in each of the four principal divisions—namely, the Islands, 70 representatives; Jutland, 51; Sleswick, 44; Holstein, 48; Lauenburg retaining its old constitutional diet. Population, exclusive of Iceland and the Faröe Isles, 2,202,074; revenue, £1,833,000; debt, £11,981,000; army, 25,000. Capital, Copenhagen, with 120,180 inhabitants.

Iceland and the Faröe Islands.

Iceland is situated in the Northern Ocean, between lat. 63° and 66° 33′ north, and long. 13° and 24° 31′ west, being about 260 miles in its greatest length, and 200 in its greatest breadth. Its area is estimated at 39,320 square miles; population about 55,000, of Scandinavian or Norse origin. The whole island is of volcanic formation, recent, or still in progress; and in aspect is rugged and barren in the extreme. Only one-ninth is habitable, the remainder being covered with ice-clad hills, called Jökuls (highest 6300 feet), or narrow valleys, rendered equally desolate by lava and ashes ejected from numerous volcanoes—of which Hecla is the best known, though not the most destructive. Besides these evidences of subterranean heat, there are numerous boiling springs (geysers), which throw up water and steam to a great height, bogs of boiling mud, and dense clouds of sulphureous steam and smoke issuing from many places. The island, though merely touching the Arctic Circle, is essentially polar in its climate: trees are stunted, and seldom rise above 10 feet; the growth of corn is rarely if ever attempted; potatoes have been introduced with some success; several kinds of culinary vegetable are raised, but, with the exception of red cabbage,

* The rocky island of Heligoland, and the neighbouring low-lying sandy down, about 26 miles from the mouth of the Elbe, belong to Britain. Population, 2120.

few attain perfection. The main harvest is hay—the rearing of cattle forming, with fishing, the principal occupation of the people. There are no regular manufactures: stockings and mittens, however, knitted by the women, form articles of export; as do also wool, skins, dried fish, oil, eider-down, &c.

The *Faröe Islands*, also in the Northern Ocean, lie between lat. 61° 30′ and 62° 20′ north, and long. 6° and 8° west; about 185 miles north-west of the Shetland Islands, and 320 south-east of Iceland. The group consists of 22 bold rocky isles, 16 of which are inhabited; have an aggregate area of 495 square miles, and a Scandinavian population of 7000. The surface of the land consists of a succession of hills (the highest 2340 feet), with intervening stripes of valley, covered with a thin soil, on which is grown potatoes, turnips, and occasional patches of barley; hay, as in Iceland, being the principal crop. There are no trees, but there is abundance of peat for fuel, as well as coal. The wealth of the population arises chiefly from sheep-rearing, fishing, and fowling.

SWEDEN.

This country occupies the eastern and more important section of the Scandinavian peninsula, and is situated between lat. 55° 20′ and 69° north, and long. 11° 10′ and 24° 12′ east. Its extreme length is about 965 miles, and its average breadth 188: the area, including islands, is computed at 170,220 square miles.

Physically, the country presents several districts of very different aspect; the whole, however, declining from the Kölen and Dofrine ranges towards the basin of the Baltic. Starting with these, which have the character of an irregular table-land, about 20 or 25 miles across, and only at intervals studded with mountains of more than 5000 feet high, we find the general elevation between 2000 and 2800 feet, covered with straggling forests of pine and birch, and intersected by narrow valleys, whose depressions are occupied by lakes and torrents. From this tract the country descends by steps or plateaux—the first being of no great breadth, and from 700 to 800 feet above the sea; the second about 280 feet high, and more than 40 miles in breadth; the third from 90 to 110 feet; and lastly, a fringe of inconsiderable elevation above the Baltic. Throughout the whole of these, the rivers which rise in the mountain plateau hold on their course, presenting numerous rapids and waterfalls; only a few of them, as the Angermans, being navigable during the two last stages of their descent. Such is the superficial character of Nordland and part of Sweden Proper. As we travel southwards through the latter territory, the face of the country becomes flat, or only diversified by the insignificant ridges which enclose the great lakes Wener, Wetter, &c. South of the lakes, the greater part of Gothland presents the same low and sandy character as the opposite coast of Denmark, and evidently belongs to the same recent marine formation. The most important *mineral products* are—iron (the best in Europe), copper, and lead in abundance; cobalt, zinc, antimony, gold and silver in minor quantities; marble, porphyry, limestone, and potters' clay.

Respecting *climate*, Nordland, part of which lies within the Arctic Circle, has from five to six months of winter; snow and ice then covering the mountains and rivers, and locking up the waters of the Gulf of Bothnia. On the other hand, the summer is sudden and short, but excessively warm; at midsummer, the sun never falls beneath the horizon north of Tornea; and the crops of oats and barley come to maturity in six or eight weeks. In the central parts, winter lasts only about four months, but is severe enough in most seasons to lock up the Baltic; and in the southern level tracts, the climate is very similar to that of northern Germany.

The *vegetable productions*, as might be expected from the high latitude and natural poverty of the soil, are by no means abundant. In the forests, which cover about 98,000 square miles, pines, firs, alders, and birches are prevalent in the north; these, with oak, elm, and ash in the central districts; and the beech, chestnut, mulberry, &c. only in the south. Apples, pears, and other garden fruits are grown in Gothland; the gooseberry family even within the Arctic Circle. The cultivated products consist chiefly of rye, barley, oats, wheat, potatoes, peas, hemp and flax, buckwheat, madder, hops, and woad in the south; but as we proceed northward, most of these disappear, and oats, barley, maslin (a mixture of barley and oats), and potatoes are alone cultivated—oats ripening so far as 68° north, and a coarse variety of barley even to the limits of the pine-woods in 69° 30′. The principal *wild animals* are—the bear, wolf, wolverine, fox, lynx, badger, otter, squirrel, lemming, and other small rodents; with a few scattered members of the beaver family. Game-birds are everywhere rife, from the partridge to the capercailzie; rapacious species, as the golden-eagle, sea-eagle, horned and snowy owl, are also frequent; and aquatic birds, as the swan, geese, and a variety of ducks, appear in great abundance, either permanently or migrant. Seals and porpoises are found in the Baltic, whose waters also furnish plentiful supplies of cod, sole, turbot, pilchard, herring, stremming, mackerel, oysters, &c.; while in the rivers and lakes are sturgeon, salmon, trout, pike, and perch.

The *inhabitants*, with the exception of a few Finns and Laplanders, are wholly of Gothic descent, speaking a variety or dialect of the old Norse—the common root of the Danish, Norwegian, and other tongues. The *religion* of the state, and that to which almost the whole population adhere, is the Lutheran, administered by 1 archbishop, 11 bishops, and about 3000 inferior clergy. All other creeds are tolerated, but none but Lutherans are eligible to any employment under the state. The *educational* institutions of the country are of a superior description, and, like the church, are upheld and supervised by the state. There are upwards of 3000 elementary schools; high-schools or gymnasia in all the provincial capitals; and two universities—namely, that of Upsala and Lund. Attendance at the primary schools is not compulsory; but every adult must give proof of ability to read the Scriptures before he can exercise any act of majority.

Industrially, the Swedes are a busy, hardy, clear-headed, and progressive people. Of late years government has given great encouragement to agriculture, and the spirit being participated by the landholders, a very perceptible improvement has taken place—so much so, indeed, that from requiring imports of corn in 1826, Sweden is now a corn-exporting country. The *fisheries*—principally in herring, stremming, salmon, white fish, and lobster—are extensively and profitably conducted; and *mining*, especially in iron and copper, employs a considerable number of hands—about 90,000 tons of bar-iron being produced annually, and not less than 800 tons of copper. The *manufactures* are chiefly domestic, the peasantry supplying themselves, as winter employment, with nearly all the coarse woollens, linens, and cottons they require. There are, however, some cloth factories, sugar refineries, distilleries, leather, paper, soap, and glass-works in the larger towns.

The *government* is a limited monarchy, hereditary in the male line, and restricted to the Lutheran creed. The legislative power is vested in the king and representative Diet, consisting of four chambers—namely, nobles, clergy, burghers, and peasantry. The executive is managed by the king and a state council.

NORWAY.

Norway occupies the western section of the Scandinavian peninsula; extends from lat. 58° to 71° 10′ north, and from long. 5° to 31° east; and is bounded on the west and north by the Northern Ocean, east by Russian Lapland and Sweden, and south by the Skager Rack. Its greatest length is upwards of 1100 miles, and average breadth 50; area 154,300 sq. miles.

The *general aspect* of the country is bleak, rugged, and sterile; the shores are rocky and precipitous, and on the west fenced by numerous small islands, and indented by *fiords*. The interior consists chiefly of the mountain masses of the Kölen and Dofrefelds; rising in the north almost from the water's edge, and in the south spread out in plateaux or *fjelds*, intersected by

narrow valleys susceptible of a scanty culture, or by steep ravines, down which impetuous rivers cleave their way by rapids and waterfalls. The lowest tracts, and those to which cultivation is chiefly limited, occur round Christiana fiord, and the adjoining shores of the Skager Rack, or to the south and east of the Bay of Trondheim. The geology of the country is primary, and yields, like the contiguous parts of Sweden, iron, copper, cobalt, zinc, marble, and slate.

The *climate* of a region, a large portion of which lies within the Arctic Circle, cannot of course be brought under one general description. Suffice it to say that it is milder, but more variable than that of Sweden under the same parallels. At Christiana, winter lasts from the middle of September to the middle of May, and summer is short and warm; in Lapland, winter endures from August till May, and for many weeks the sun is invisible (the aurora borealis and stars being the only natural lights); while summer is short and fervid, the sun never sinking beneath the horizon.

The *inhabitants*, with the exception of the Laplanders, are members of the Teutonic race, and immediately descended from the old Scandinavian Norsemen—a dialect of whose language they employ. In *religion* they are Lutherans; but all other sects are tolerated save Jews, who are prohibited from settling in the country. In *educational* matters, Norway is indebted to her former connection with Denmark; in every parish there is a school for elementary instruction, academies of *laerde-skoles* in thirteen of the principal towns, and a university in the capital.

The *industry* of Norway is chiefly limited to her *forests*, which yield excellent timber, bark, and tar; to her *fisheries* of cod, lubfish, herrings, lobsters, salmon, anchovies, &c.; to her *mines* and foundries of iron, copper, and cobalt; and to *shipping* (2280 vessels, navigated by 11,400 men), much of which is employed in the carrying-trade of other countries. *Agriculture* is in a very rude and primitive state; and the manufactures are almost wholly domestic.

With respect to *government*, Norway was an appanage of the Danish crown until 1814, when, by the convention of Kiel, it was placed under that of Sweden. It still, however, retains its own representative body or *storthing* (which is essentially democratic); and is, in reality, no more connected with Swedish rule than Hanover was formerly with Britain. The executive is vested in a viceroy and council at Christiana; and for administration, the country is divided into 5 *dioceses*, and these again into 17 *amts* or provinces. Aggregate population of Norway and Sweden, 4,306,600; revenue, £155,600; debt, £651,000; army, 50,000.

PRUSSIA.

This is one of the great European powers, occupying a large portion of northern and western Germany, part of what was formerly Poland, some detached patches in middle Germany, and to these may be added the Swiss canton of Neufchatel, which acknowledges the sovereignty of the Prussian king. The country has thus an extensive and heterogeneous frontier, which weakens, or at all events keeps in check, that power which, in less than a century, added to the original duchy of Brandenburg the above-mentioned territories, and rose to the position of a first-rate kingdom. Its area, exclusive of Neufchatel, is 107,842 square miles.

Its *physical aspect*, *geology*, *climate*, *vegetation*, and *animal* productions, are identical with those described under the north and west of Germany; the surface being generally level, with the exception of the hilly, mineral districts of Saxony and Silesia; the soil sandy, and often covered with heaths; defaced by large bogs and morasses, particularly in the north-east; presenting in most districts extensive forests of fir; and only generally fertile in Saxony and the Rhenish provinces. The chief hydrographical features not already adverted to are—the Oder, with its large tributaries the Neisse, Spree, Wartha, and Netz; portions of the Russian rivers Vistula and Niemen; the curious *haffs*, or fresh-water lagoons, which communicate with the Baltic by navigable openings; and the celebrated thermal springs of Aix-la-Chapelle (148°).

The *people* of Prussia belong principally to the great Germanic and Sclavonic families—the Poles in Pozen, West Prussia, &c. belonging to the latter, and the bulk of the inhabitants in the other provinces to the former. German is the language of the court, as well as of the better-informed classes in all the provinces. The Lithuanians in East Prussia, the Vandals in Pomerania, and the Jews in the principal cities, do not exceed perhaps 250,000. With regard to *religion*, all sects and creeds enjoy the amplest liberty; nearly three-fifths professing the evangelical faith, two-fifths that of the Roman Catholic, the fraction being Jews, Mennonites, Rationalists, &c. 'In no other country is the *system of education* so complete; and in none is the instruction of all classes so carefully provided for. The law imposes upon parents the strict obligation of sending their children to school, unless they can prove that they are giving them a proper education at home; and care is everywhere taken to furnish the poor with the means of complying with this law, by providing their children with the things necessary, and even with clothes. Every parish is bound to have an elementary school, and every town one burgh-school or more, according to the population. Above these are gymnasiums, and in these institutions classical learning is pursued preparatory to admission into the universities, of which there are seven—in the cities of Berlin, Breslau, Halle, Bonn, Konigsberg, Munster, and Greifswald.' Besides these there are normal schools for the training of teachers, establishments for instruction in particular arts, and collections of natural history, philosophical apparatus, and public libraries, accessible to any person who chooses to avail himself of their assistance. The whole of this admirable system is upheld partly by private fees, partly by the respective towns and provinces, and partly by the state; the whole being under the strict and unremitting surveillance of government functionaries.

The *national industry* has been already detailed under that of the German Confederation. Prussia, however, is mainly an agricultural country—the Rhenish provinces, Saxony and Silesia, being as yet the only manufacturing districts. Internal communication is conducted by means of several good lines of road; by the great rivers, which are all less or more navigable; and by the great German lines of railway.

Government, a hereditary monarchy, with a council of state; and since 1824, provincial assemblies, to whom laws are submitted for deliberation. For administrative purposes, the country is divided into ten provinces, which are subdivided into regencies, and these again into circles. National debt about £22,515,000; revenue, £8,650,000; expenditure, £8,700,000; standing army, 150,000—the war complement, 337,000 men.

RUSSIA.

The Russian Empire comprises the whole northern region of the eastern hemisphere, from the frontiers of Prussia and the Baltic on the west to the Pacific on the east; crosses Behring's Straits, and includes a portion of North America in the western hemisphere; together with a number of islands in the adjacent seas. Much of this vast territory—which amounts to nearly one-seventh of the terrestrial part of the globe—is, however, uninhabited, and indeed unfit to be so; the greater portion rude and ungenial, and but thinly tenanted by semi-barbarous tribes; and only that section in central Europe entitled to be ranked with civilised nations. European Russia, to which we now limit our description, is bounded on the north by the Arctic Ocean; east by the Oural Mountains and the Caspian; south by the Caucasian range and the Black Sea; and west by Turkey, Austria, Prussia, and the Baltic. The area is estimated at 2,045,000 square miles.

Superficially, the territory may be regarded as one vast plain, with a slight elevation running diagonally

across the interior, and forming the great water-shed which diverts the rivers to the Arctic Ocean on the one hand, and to the Caspian and Black Seas on the other. If we except the Ouralian Mountains on its eastern border, and a hilly tract in the Crimea, there is no portion of the country which rises more than 1100 feet above the sea, and that only near Valdai in the central plateau. 'The northern section, which sensibly declines,' says a native author, 'towards the White and Frozen Seas, is covered with vast forests, abounds in marshes and lakes, and is but little fit for cultivation. The other, and more southerly portion of the plain, includes the whole district along the Wolga, as far as the sandy steppes or deserts between the Caspian and the Sea of Azov, and constitutes the finest part of Russia: generally, it has a fertile soil, the arable and pasture land preponderating over the woods and marshes. That part of the country which extends towards Voronej, Tambov, Penza, and Simbirsk, as far as the deserts, is remarkable for the superior quality of every kind of fruit and other produce. It has everywhere an excellent soil, consisting of black earth, strongly impregnated with saltpetre. But the tract which commences between the Sea of Azov and the Caspian, and extends near the shores of the latter, and between the Wolga and Oural, as far north as the Samara, is little better than a desert, being level, dry, high, barren, and full of salt lakes.'

The *rock formations* of Russia present much less variety than might be expected from the extent of the country, chiefly in consequence of the flat and unbroken manner in which they lie. The chief economic minerals are—gold, platina, silver, lead, and copper from the Oural; copper and tin in Finland; iron from the central elevation of Valdai, &c.; coal in Poland, Toula, and Ikatherinoslav, but of little importance; rock-salt and brine-springs in Poland, Taurida, Perm, and other places; lime, alabaster, gypsum, and amber.

The *climate* of Russia is said to be much colder than that of other European countries in the same latitude; and the farther we proceed eastward, the temperature becomes still lower, in consequence of the uncultivated state of the surface, distance from the tempering influences of the ocean, and the frequency of easterly and northerly winds from the icy regions of the Arctic Ocean. In the northern section the winter is severe, and lasts from eight to nine months; all the rivers and seas are frozen, and the ground deeply covered with snow: summer, on the other hand, is short and hot; and there is, generally speaking, neither spring nor autumn. In the central region winter is also severe, but shorter; there is something like spring and autumn, and summer is still warmer. In the south, winter continues only for about five months, freezing the rivers and shores; and summer is often fervid and oppressive. The provinces bordering on the Baltic have a wet and variable climate, and this feature extends to the elevated tract which borders the upper basin of the Wolga; but farther eastward, and in the extreme north and south, the atmosphere is clear and dry—a circumstance which materially modifies the effects of the winter's cold.

The *vegetable* and *animal productions* present less variety than might be expected from a region lying between the 45th and 70th parallels. The most remarkable feature in the former is the vast expanse of forest growth, covering about two-fifths of the entire superficies. As already hinted, these are most extensive in the north and central regions, especially between the 55th and 60th parallels, where it has been said that a squirrel might travel between St Petersburg and Moscow without touching the ground. Among the cultivated plants we may notice rye all over the country, barley to 67° north, oats to 62° north, wheat in the fertile tracts along the southern rivers, millet along the Don, hemp and flax in the west and centre, tobacco in the Ukraine, cranberries in the marshes of the north, fruit in the south-east, the vine in the Crimean and Caucasian provinces; and variously, potatoes, rape, rhubarb, poppy, &c. The characteristic wild *animals* are—the polar bear, the black and brown bears of the forest, the reindeer, elk, urus, wild horse of the Ukraine, wolf, blue fox, lynx, beaver, sable, ermine, lemming, &c.; game, but not abundantly; the sturgeon, salmon, trout, carp, pike, mackerel, and a variety of other fishes in the rivers; and the bee, whose honey and wax form valuable products of consumption and export.

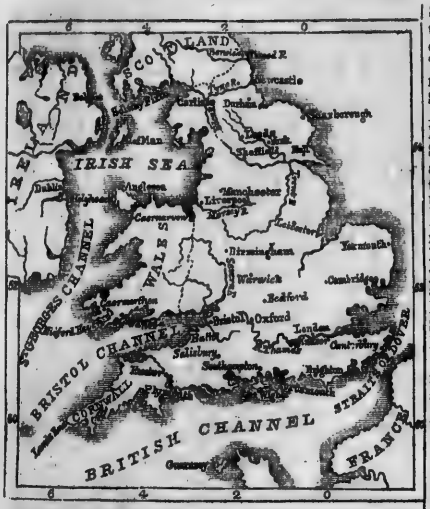
The *population* of the country, amounting to 60,000,000, is composed of a vast variety of races, differing in language, religion, manners—from the rudest state of barbarism to the highest point of European civilisation. Laying aside minor distinctions, they may be classed under the following stocks:—The *Sclavonic*, including the Russians Proper, the Poles, Bulgarians, and Servians; the *Finns* of Finland, Lapland, and Esthonia; the *Lettish* tribes of the Baltic provinces; the *Toorkees* of the Caucasus, Astrakhan, Kazan, the Crimea, &c.; the *Deutsch* or *Germans* in Riga, Revel, and St Petersburg; the *Goths*, including the Swedes of Finland; and in lesser numbers Danes, Jews, Greeks, French, and English. The settled inhabitants are ranked in four classes—nobles, clergy, citizens, and peasants; the peasants being either freemen with limited privileges, or serfs belonging to the soil, and transferable like any other species of property.

All forms of *religious faith* are tolerated; but that of the orthodox Greek Church prevails, and is adhered to by the Russians, Servians, Cossacks, &c. The Roman Catholic faith is professed by the Poles and Lithuanians; the Swedes, Danes, Finns, and most of the Germans are Lutherans; Calvinism reckons but a small number of Poles and Germans; Islamism is the creed of the Toorkee or Tartars; and the Jews observe the Mosaic ritual. *Educationally*, the country is in a very depressed state, if we take into account only the peasants and lower orders; but among the citizens and higher classes there is a more general dissemination of knowledge than is generally believed. According to an educational scheme drawn out in 1802, somewhat similar to that of Denmark, a certain number of universities, lyceums, and elementary schools were to be erected, upheld, and conducted under government; but only a few of these have as yet been established.

The *industrial operations* of the country are as yet conducted in a very primitive manner, and upon a limited scale, considering the vastitude of the natural resources. *Agriculture* is in its first stage, and yet, owing to the excellency of the soil and comparatively small home demand, large supplies are annually exported. Of late years, *manufactures*, under high protective duties, have risen to some consideration, and the country now possesses a number of establishments for the preparation of woollen goods, silk, cotton, linen, and metal wares. The chief seats of these are the governments of Moscow, Novgorod, Vladimir, Saratov, Toula, and St Petersburg. 'The Russians,' says Waterston, 'excel in the manufacture of leather; and from their advantages in respect to raw material, their canvas, strong linens, cordage, felt, mats, potash, soap, candles, caviar, and isinglass, are quite as good as those made elsewhere; but in all other branches their productions cannot compete with those of Western Europe, especially Britain, as to finish, durability, and cheapness; and their existence is therefore dependent upon a prohibitory system of export duties.'

The *government* is an absolute hereditary monarchy; all power emanates from the czar, emperor, or autocrat, whose authority is without limit or control. He is the central point of the administration, the head of the church as well as of the state, and to his decision, or for his sanction, all important measures must be submitted. His authority is delegated to certain boards, the members of which are of his own appointment; and to these respectively are committed the ordering and execution of all legislative, judicial, civil, religious, financial, and other affairs. Population, 60,362,250; revenue, £16,380,000; debt, £76,800,000; army 500,000. Capital, St Petersburg, with 476,000 inhabitants.

ENGLAND AND WALES.


IRISH SEA
BRISTOL CHANNEL
BRITISH CHANNEL
WALES
Newcastle
Durham
Manchester
Liverpool
Birmingham
Norwich
Cambridge
Oxford
London
Bristol
Salisbury
Southampton
Brighton
Dublin
Cork
Limerick
Kilkenny
Waterford
Wexford
Kilkenny
Cashel
Tipperary
Kilmallock
Ennis
Galway
Tuam
Sligo
Ballina
Castlebar
Ballinrobe
Ballinasloe
Athlone
Mullingar
Navan
Kilkenny
Wicklow
Tullamore

and south direction, so that a geological map exhibits them (not taking minor interruptions into account) like so many longitudinal bands overlapping each other, from the slates of Cornwall and Wales, to the chalks and tertiary clays of Kent and Middlesex. These formations display most of the subordinate groups of the geologist (see No. 2), with all their characteristic animal and vegetable remains in great perfection.

Thus, in Cornwall and Devon eminences of granite, serpentine, and porphyry occur, while the slopes resting on them are composed of different kinds of slate. The granite of this district is extensively used for paving in London, though considered less hard and durable than that brought from Scotland. The Welsh mountains are composed chiefly of varieties of slate, with some intermixture of volcanic rocks, as basalt and trap; while a rich coal-field, 100 miles in length, and from five to ten in breadth, rests upon their southern verge, extending from Glamorgan into Pembrokeshire, being the largest coal-field in Great Britain. The northern range of mountains is also chiefly composed of slate rocks, there being only one mountain of granite near Shap in Westmoreland. Between these ranges of mountains, and a line drawn from Exmouth, through Bath, Gloucester, Leicester, Nottingham, and Tadcaster, to Stockton-upon-Tees, the surface is composed of the lower secondary strata, including rich beds of coal, the existence of which in this situation is mainly what has enabled England to become the first manufacturing country in the world. The eastern parts of the counties of Durham and Northumberland, from the Tees northward to Berwick, form a peculiarly valuable coal-field, of numerous beds, from which the metropolis and other cities in the east of England and elsewhere are supplied with this important mineral. Another coal-field of great value, and that upon which the manufactures of Manchester depend, extends northwards from Macclesfield to Oldham, and thence westwards to Prescot near Liverpool. A coal-field near Wolverhampton, in Staffordshire, is the most valuable in the centre of England: upon it depend the extensive metallic manufactures of Birmingham.

To the east of the line drawn from Exmouth to Bath, and thence by Gloucester, Leicester, and Tadcaster, to Stockton-upon-Tees, we find the upper rocks of the secondary formation, presenting in succession red sandstone and red marl, lias limestone and clay, oolitic limestone, green sand with clay, and finally chalk. Connected with the red marl, vast masses of rock-salt are found; these are extensively dug in Cheshire and Worcestershire for domestic use. Lias, which extends from Lyme in Dorsetshire to Whitby in Yorkshire, is remarkable for the remains which it presents of the large saurian reptiles. Beds of oolitic limestone cover the southern part of Gloucestershire, and a great part of Oxfordshire, Northamptonshire, Rutlandshire, and the eastern side of Lincolnshire. The chalk exists everywhere to the south-east of a line commencing near Dorchester, on the south coast, and passing through Wilts, Berks, Norfolk, and so on to Flamborough Head—excepting in Sussex and Kent, where it has been carried off by denudation, exposing a peculiar formation called the *wealden*, and in the bed of the Thames near London, and one or two other places, where tertiary beds of clay occur. To sum up—the economic *mineral produce* of England consists chiefly of granite, roofing-slate, limestone, some marble, coal, both bituminous and anthracite, building-stones of various kinds, rock-salt, alum, potters' clay, fullers' earth, and siliceous sands; the *metallic* of copper, tin, lead, silver, zinc, manganese, iron, antimony, arsenic, and plumbago. The main depositories of the metals are the hills of Cornwall, Devon, Wales, and Cumberland. Iron, as a clay carbonate, is chiefly obtained from the shales of the coal-measures. The principal coal-fields are those of Durham and Northumberland, Lancaster, Stafford, and South Wales. Rock-salt and brine springs are found only in Cheshire and Worcester; and plumbago almost solely in Borrowdale, Cumberland.

HYDROGRAPHY, &c.

The *gulfs*, *bays*, *straits*, and other arms and indentations of the oceans which surround England are, with one or two exceptions, of limited dimensions. On the east coast are—the estuary of the Humber, receiving the waters of several rivers; the Wash, a large shallow inlet full of sandbanks and mud-shoals; Harwich Harbour; Blackwater Bay; and the estuary of the Thames, also incumbered with numerous intricate shoals and sandbanks. On the south are—the irregular expanse formed by the Solent and Spithead roads, and Southampton water, the last of which runs inland for ten or twelve miles, and is navigable to its extremity; Plymouth Sound, celebrated for the stupendous breakwater which protects its water from the swell of the Atlantic; Falmouth Harbour, and Mounts Bay, so called from St Michael's Mount, a curious insulated rock a little off the mainland. On the west are—Barnstaple Bay; Bristol Channel, a deep gulf 25 miles wide at its entrance, and about 8 where it joins the estuary of the Severn; the bays of Swansea and Caermarthen; Milford Haven, one of the safest and most capacious harbours of England; St Bride's Bay; the large bays of Cardigan and Caernarvon; the estuaries of the Dee, Mersey, and Ribble; and Morecambe Bay, a large inlet, so shallow that proposals were at one time made to reclaim it from the sea. The straits are those of Dover, 21 miles across, and about 17 fathoms at its deepest part, supposed by geologists to be of recent excavation—England before that event having been attached to the main continent; and the Menai Strait, separating the island of Anglesea from the mainland of Wales, about 14 miles in length, and varying from 2 miles to 200 yards across. This strait is crossed by a magnificent suspension-bridge, erected by Telford in 1826; and is now in course of being spanned by a suspension railway-tube or tunnel of still more gigantic proportions and curious construction.

The principal *capes* are Flamborough Head, Spurn Head, North Foreland, and South Foreland on the east; Dungeness, Beachy Head, St Alban's Head, Portland Point, Start Point, Bolt Head, and Lizard Point on the south; Land's End, Hartland Point, St Goven's Head, St David's Head, Stumble Head, Holyhead, Ormes Head, and St Bee's Head on the west; and Air Point in the Isle of Man. All of those mentioned on the east and south, and the two last on the west, are the sites of lighthouses, indispensable to the safety of the immense coasting trade of the country.

The *islands* geographically connected with England are, with one or two exceptions, small and unimportant. Off the east coast are—Holy Isle or Lindisfarne, containing the remains of an abbey and castle; the Farns, a dangerous group of small rocky islets; Foulness and Sheerness at the entrance of the Thames; and the Isle of Thanet, formed by two branches of the small river Stour. Off the south coast—the large, beautiful, and salubrious Isle of Wight, sometimes called 'The Garden of England;' Purbeck and Portland Islands, noted for their quarries; the Eddystone rock, with its celebrated lighthouse; and the Scilly Islands—a group consisting of seventeen rocky islets, thirty miles west-south-west from the Land's End. Off the west coast—the small islands of Lundy, Skomer, Bardsey, Holyhead, and the Skerries; the large island of Anglesea; and the Isle of Man, which, legislatively and judicially, forms a sort of independent territory. (For Jersey, Guernsey, &c. see No. 63, p. 193.)

The *lakes* of England are few, and of very tiny dimensions; the largest scarcely covering an area of four square miles; but the beauty of their associated scenery has conferred on them an almost universal reputation. We refer to the lakes of Cumberland, Westmoreland, and the north of Lancashire; the largest of which are Winandermere, Ullswater, Thirlmere, Derwentwater, Bassenthwaite, Buttermere, and Crumnockwater. These lie amid the vales and recesses of the Cumbrian range; and it is the combination of Alpine wildness and gran-

deur, with the soft scenery which reposes in clothed slope and mirror-like lake, which gives to the 'Lake District' its principal charm. (See p. 214.)

The principal *rivers* of England, beginning with those falling into the German Ocean, are as follow:—The Tyne, Wear, and Tees, all navigable to a certain extent by means of steam-tugs, and forming valuable channels of communication with the inland coal-fields of the district; the Humber, with its larger tributaries the Ouse, Wharfe, Aire, Calder, Don, and Trent, draining an immense tract of fertile country, and navigable to a considerable distance by barges; the Witham, Welland, Nen, and Great Ouse, which fall into the Wash, also navigable to a great distance inland; the Thames, with its numerous small feeders, the Charwell, Windrush, Kennet, &c.—the 'Father of English rivers,' navigable by ships of all burden up to the docks of the metropolis; and the Medway, with its open estuary, navigable by the largest vessels up to Chatham. The largest falling into the Atlantic are the Severn, with its affluents Wye, Teme, classic Avon, and lower Avon, all forming valuable channels of communication with the interior; the Dee, navigable to Chester; the Mersey, the great outlet for the manufacturing districts of the west; the Ribble; and Eden.

Connected with these are many minor *streams*, which contribute to the beauty and fertility of the country; and also a number of *springs*, celebrated for their mineral and medicinal properties. The principal of these are the salt springs of Northwich, Nantwich, &c. in Cheshire, and of Droitwich in Worcester, which yield salt in immense quantities; and the medicinal springs of Bath, Bristol, Cheltenham, Tunbridge Wells, Epsom, Leamington, Matlock, Buxton, and Harrowgate. Some of the latter are thermal or hot springs—as Bath, at a temperature of 114°; Buxton, 82°; Bristol, 74°; and Matlock, 68° Fahrenheit.

CLIMATE.

The climate of England, according to Macculloch, 'is chiefly characterised by the absence of extremes in temperature, by humidity, and by almost incessant variations within a limited range; peculiarities ascribable to the geographical position of the country, in contiguity with an extensive continent on the one hand, and a vast ocean on the other: the latter with nearly the same temperature throughout the year, and exerting an equalising influence over the contiguous atmosphere; the other with a varying temperature, above that of the ocean in summer, and lower during the winter months. Hence the origin and direction of the prevailing winds at different periods of the year, according to whichever of those great surfaces exert most rarefying power: those blowing from the continent being comparatively dry, whilst those from the ocean, being charged with its exhalations, bring the chief part of the rain which descends, two-thirds of it falling on the west side of the country.' The average temperature in winter is about 40° Fahrenheit; in summer the day temperature is generally about 60°, very rarely 80°. The mean fall of rain for the whole kingdom is about 36 inches; though in Cumberland, for example, there is said to fall 60 inches, and in the neighbourhood of London only 23. The prevailing winds are from the south-west and west; the next in order of frequency from the north-east.

Being more inclined to cold and humidity than that of continental countries under the same latitude, the climate is more favourable to the growth than to the ripening of vegetable productions. It is certainly not unfavourable to either the physical or moral condition of the people. Perhaps even its uncertainty has been the subject of too much grumbling. On this point we may adduce the cheerful opinion of Charles II., as recorded by Sir William Temple. 'I must needs,' says Sir William, 'add one thing more in favour of our climate, which I heard the king say, and I thought new and right, and truly like a king of England that loved and esteemed his own country: it was in reply to some of the company that were reviling our climate, and extolling those of Italy and Spain, or at least of France. He said he thought that was the best climate where he could be abroad in the air with pleasure, or at least without trouble and inconvenience, the most days of the year, and the most hours of the day; and *this he thought he could be in England more than in any other country in Europe.*' Devonshire, and some adjacent districts on the southern coast, enjoy a temperature which in winter is, at an average, two, three, four, and even in some instances five degrees above the rest of the country; and these districts are therefore recommended for the residence of persons affected by pulmonary disease.

BOTANY AND ZOOLOGY.

Though the native *vegetation* of the country may be described as verdant and luxuriant, yet most of the fruits, ornamental trees and shrubs, bread-corns, green-crops and roots, are exotics which have become naturalised by a long course of care and culture. Without drawing any distinction, however, between what is indigenous and what of foreign importation, we may enumerate the following as the most important of her vegetable productions:—In some of the southern parts the vine grows luxuriantly, but seldom brings its fruit to perfection; at ordinary elevations, and all over the kingdom where suitable soil is to be found, the pear, apple, medlar, cherry, gooseberry, currant, strawberry, raspberry, and other fruits come to perfection; and the same may be said of the bread-corns—wheat, rye, barley, and oats—of beans and pease, of the potato, hop, turnip, carrot, beet, hemp, flax, rape, buckwheat, woad, madder, teasel, the artificial grasses, and a vast variety of useful and ornamental vegetable products. At elevations under 700 feet or thereby; most of the timber trees and ornamental shrubs—as the oak, beech, sycamore, poplar, elm, ash, hornbeam, maple, lime, laurel, laburnum, chestnut, yew, larch, and pine—attain a profitable growth; up to 900 or 1000 feet, the ash, alder, hawthorn, and pine continue to thrive; but above that height, the mountain ash, some of the smaller willows, the cranberry, bilberry, juniper, and heaths are the only inhabitants. One peculiar feature in the vegetation of England is the royal forests, of which the New (67,000 acres), Dean (23,000), Woolmer (6000), Whittlebury (5400), Windsor (4400), Delamere (3800), and Whichwood (3700), are the most extensive.

The *zoology* of England, like that of all other highly-civilised countries, is almost entirely limited to animals which can be profitably domesticated. Confining their attention to the latest superficial deposits, geologists have determined that at no very distant era the country was peopled with elephants, hippopotami, the wild horse and ox, bears, hyenas, wolves, elks, the wild boar, beavers, &c.; but these have now entirely disappeared, partly from cosmical conditions, and partly through the agency of man. The existing *quadrupeds* in a wild state are the fox, badger, polecat, marten, otter, weasel, stoat, hedgehog, mole, squirrel, hare, rabbit, a few species of bat, and several species and varieties of the rat or mouse family. The fallow-deer and roe exist in a protected or half-wild state, as does also the *urus* or wild ox, still preserved as a curiosity in some of the parks of the nobility. Of *reptiles*, there still exist the adder, common snake, and blindworm, the frog, toad, and lizard; but none, save the first, are at all venomous. Of *birds*, there are an immense variety, partly indigenous, and partly migratory visitants. The most curious and valuable of these are the bustard, quail, grouse, ptarmigan, partridge, pheasant, and blackcock; the geese and ducks of the fens; the eagle; the nightingale, which is seldom heard north of the Humber; and the turtle-dove, a summer visitant of the southern counties only. Of *marine animals*, a few of the porpoise family frequent the seas; the herring and mackerel are caught chiefly on the east coast; the pilchard exclusively on the south; cod, haddock, whiting, ling, and hake in various parts; oysters fattened principally on

the south and south-east; the scallop, cockle, periwinkle, limpet, &c. on rocky shores, which are also frequented by the crab and lobster. In several of the rivers salmon are found, though somewhat scantily, and sturgeon are occasionally met with; but in most of the fresh waters, eels, dace, trout, bream, perch, pike, and other fishes are abundant.

Of the domesticated animals, England possesses some first-rate varieties—as the racer, Cleveland bay, Suffolk punch, and old English black of the *horse*; the Hereford, Gloucester, and Teeswater of the *ox*; the Leicester and South Down of the *sheep*; and the Berkshire and Rudgwick of the *pig*—all of which are described at length in Nos. 37–40 inclusive.

PEOPLE—POPULATION.

Ethnologically, the constituent elements of the English population are to be traced in the history of the country. The first inhabitants were Britons, probably a mixed Celtic race, and who, during the time of the possession of the country by the Romans, must have become slightly changed by the admixture of that race. Upon a scattered population of Romanised Britons came the great wave of the Saxon invasion in the fifth and sixth centuries. After this, the predominant element of English society was undoubtedly Saxon, the Norman Conquest only adding to it a French aristocracy, which little affected the great bulk of the population. The English, therefore, exclusive of the Welsh, who are Britons almost unchanged, may be regarded as in the main a Teutonic people, an admixture of British entering into the composition always less and less as we advance from Wales towards the eastern coasts, where the people are nearly pure Saxon.

According to an acute writer in Blackwood's Magazine for 1829, 'the Saxon Englishman is distinguished from other races by a stature rather low, owing chiefly to the neck and limbs being short, by the trunk and vital system being large, and the complexion, eyes, and hair light; and by the face being broad, the forehead large, and the upper and back part of the head round, and rather small. In his walk, the Englishman rolls, as it were, on his centre. This is caused by the breadth of the trunk and the comparative weakness of the limbs. The broader muscles, therefore, of the former, aid progression by a sort of rolling motion, throwing forward first one side and then another. . . . The mental faculties of the Englishman are not absolutely of the highest order; but the absence of passion gives them relatively a great increase, and leaves a mental character equally remarkable for its simplicity and its practical worth. The most striking of those points in English character, which may be called fundamental, are *cool observation, unparalleled single-mindedness*, and *patient perseverance*. This character is remarkably homogeneous.

The cool observation of the Englishman is the foundation of some other subordinate, but yet important points in his character. One of the most remarkable of these is, that real curiosity, but absence of wonder, which makes the *nil admirari* a maxim of English society; it is greatly associated also with that reserve for which the English are not less remarkable. The single-mindedness of the Englishman is the foundation of that sincerity and bluntness which are perhaps his chief characteristics; which fit him so well for the business of life, and on which his commercial character depends; which make him hate (if he can hate anything) all crookedness of procedure, and which alarm him even at the insincerities and compliances of politeness. The perseverance of the Englishman is the foundation of that habitude which guides so many of his own actions, and that custom in which he participates with all his neighbours. It is this which makes universal cant, as it has been profanely termed, not reasoning, the basis of his morals; and precedent, not justice, the basis of his jurisprudence. But it is this also which, when his rights are outraged, produces that grumbling which, when distinctly heard, effectually protects them; and it is this which creates that public spirit, to which, on great emergencies, he rises with all his fellow-countrymen, and in which he persists until its results astonish even the nations around him.

Now a little reflection will show, that of the three fundamental qualities I have mentioned, the first seeming may easily be less amiable than the final result shall be useful. To a stranger of differently-constructed mind, the cold observation, and, in particular, the slowness and reserve which must accompany it, may seem unsociable; but they are inseparable from such a construction of mind, and they indicate not pride, but that respect for his feelings which the possessor thinks them entitled to, and which he would not violate in others. The dignity, therefore, which in this case the Englishman feels, is not *hauteur*; and he is as rarely insolent to those who are below, as he is timid and deferent to those who are above him.

In regard to the absence of passion from the English mind, it is this which forbids one to be charmed with music, to laugh at comedy, to cry at tragedy, to show any symptom of joy or sorrow in the accidents of real life; which has no accurate notion of grief or wretchedness, and cannot attach any sort of meaning to the word ecstacy; and which, for all these reasons, has a perfect perception of whatever is ridiculous. Hence it is, that in his domestic, his social, and his public relations, it is perhaps less affection than duty that guides the conduct of an Englishman; and if any one question the moral grandeur which this sentiment may attain, let him call to mind the example of it, which, just before the victory of Trafalgar, was given by Nelson in the simple and sublime communication to his fleet—"England expects every man to do his *duty!*" Which is the instance that equals this, even in the forged records of Roman glory? Happily, too, the excess of hatred is as little known to the Englishman as excess of love; and revenge is abhorrent to his nature. Even in the pugilistic combat he shakes hands with his antagonist before he begins; he scorns to strike him when he is down; and, whether vanquished or victor, he leaves his antagonist neither cast down nor triumphant. The extraordinary value of such a character is obvious enough. British liberty and British commerce are its results: neither the Scottish nor Irish mind would have attained them.'

In this sketch, though clever and forcible, some conspicuous features of the social character of the English are overlooked. The domesticity of the Englishman's mode of life is very remarkable, when taken in contrast with the lounging, open-air existence of continental nations. The Englishman delights in his home, and spends much of his time in it—a result to which the nature of the climate undoubtedly contributes. He appreciates his home very highly, calls his house his castle, and prides himself on its being inviolable even by the emissaries of the law. The members of his family, his wife, his sons and daughters, are taken along by him in most of his recreations and pleasures. The conjugal tie is deemed peculiarly sacred, insomuch that the slightest dishonour offered to it is universally resented. It cannot be said, however, that the affections of kindred are much recognised in England beyond the nearest class of relations. In all personal and domestic circumstances, the substantial is kept strongly in view, even while the ostensible object is ornament. The aristocratic institutions of the country have mixed, with the sturdy independence of the English character, a considerable reverence for external and accidental distinctions, and created a disposition, pervading almost all classes, to hold forth appearances rather above than below their means. For the same reason, as well as that abstract truths are not readily apprehended by the English intellect, there is a strong and general disposition to cling to ancient practices and forms in both government and law.

The population of England in the time of the Plantagenet sovereigns is believed to have been little more than two millions. It has been estimated at 5,500,000

in 1696. The progress during the greater part of the eighteenth century was slow; the amount in 1760 is supposed to have been about 6,500,000. In 1801, for the first time, a regular census was taken; and this has been repeated once in ten years ever since, giving the following results:—

1801,	8,872,980	1831,	13,894,569
1811,	10,163,876	1841,	15,906,741
1821,	11,978,873		

The rapid advance of our population is placed in a striking light, when we consider that, for the United Kingdom, it is nearly a thousand per day. Within the last fifteen years, emigration has been proceeding on a scale of unprecedented magnitude; yet, even in the years during which it has been most active, it has not been sufficient to drain the country at one-third of the rate at which its population has been increased by new births. This rapid increase of numbers clearly shows that, whatever partial evils there may be in the condition of the people, the country must upon the whole have enjoyed, for nearly fifty years, a high degree of prosperity; for it is quite insupposable that, with stationary resources, so many new mouths could have been fed, unless there had been, what certainly there has *not* been, a large and general deterioration in the style of living. It is to be remarked, however, that an immigration to a great extent from Ireland has been going on for upwards of twenty years, and that generally the Irish settlers continue in England to live in a style little superior to that which they followed in their own country. The increased population has chiefly taken place in the manufacturing towns. It is calculated, indeed, by Mr Macculloch, that nearly a third of the people live in towns of above 10,000 inhabitants. Most of the large cities have experienced a rapid advance of population within the last twenty years. 'It appears that, while during the ten years ending with 1840, the entire population increased at the rate of 14·4 per cent., that of the great towns increased at the rate of 20·2 per cent. But if we compare the population of 1831 with that of 1841—deducting the population of the great towns as given above at each of these periods—the ratio of the increase of the rural population, including the smaller class of towns, will be found to be 11·2 per cent., or 9 per cent. under the increase of the great towns.' These facts serve to show that it is the development of the manufacturing, and not of the agricultural energies of the country, which has mainly tended to augment the population. [For further details respecting population and vital statistics, see No. 62, p. 191.]

NATIONAL INDUSTRY.

In point of national industry England stands unrivalled by any other country on the globe. Her *agriculture*, though still more antiquated and less systematic than that of Scotland, has recently made rapid improvement; and, under different methods of lease, would soon attain a perfection worthy of her other industrial pursuits. As it is, about a third of the surface is under average cultivation, yielding profitably the ordinary white and green crops; a large proportion under first-rate pasture for fattening and dairy purposes; and a considerable extent under nursery, fruit and kitchen gardens, and pleasure-grounds. Altogether, the total agricultural produce of England—grain, green crops, live stock, dairy and other produce—cannot fall little short of £140,000,000. Assuming the entire area of England and Wales to be equal to 37,094,400 statute acres, it is estimated that 11,143,370 consist of arable fields and gardens; 17,605,630 of meadows, pastures, and marshes; 3,984,000 wastes capable of improvement; and 4,361,400 incapable of improvement. The *fisheries* carried on along the coasts of England can scarcely be regarded as one of the great sources of national wealth, although, on an average, they give employment, at sea and on shore, to no fewer than 14,000 hands.

In *mining* industry this section of Britain has long stood unrivalled. The operations, particularly in coal, iron, copper, tin, lead, and rock-salt, are conducted upon the most extensive and efficient systems; and the produce so obtained constitutes not only an important source of national riches, but has contributed in a marked degree to the advancement of the other arts and manufactures. The annual mineral produce for the last five or six years has been estimated as follows:—About £10,000,000 from coals; £3,600,000 from iron; £1,200,000 from copper; £920,000 from lead; £400,000 from salt; £390,000 from tin; £60,000 from manganese; £35,000 from silver; £22,000 from alum; £8000 from zinc; £25,000 from the other metals—as antimony, bismuth, arsenic, &c.; not taking into account the value of the rocks used in building, paving, and the like, nor the clay and sand used in the fabrication of pottery, glass, bricks, tiles, &c.

With regard to the *arts* and *manufactures*, there is scarcely a branch which is not less or more attempted: we can only enumerate the leading departments:—1. *Soft fabrics*, as cotton, valued at £30,000,000 annually; woollens, as cloths, carpets, hosiery, &c. about one-fifth less; silk, at £12,000,000; linen employs about 17,000 hands; lace, gloves, straw-plait, &c. unknown; paper, £1,500,000; leather manufactures, £13,000,000; hats, £2,800,000. 2. *Hardwares*, comprising all kinds of articles, 'from the anchor of a man-of-war to the most delicate furniture of a lady's work-box.' Under this head rank steam-engines, general machinery, clocks and watches, cutlery and tools, jewellery and plate; and some idea of their value may be formed from the fact, that the annual produce in clocks and watches alone amounts to £17,000,000. 3. *Chemical* and *fictile* manufactures, the chief of which are—glass, amounting in annual value to £2,000,000; china and earthenware to £2,300,000; soap, alkalies, dyes, &c. 4. *Distilling*, *brewing*, *baking*, and other alimentary preparations. 5. *Ship-building* in wood and iron, and the allied arts of masonry, joinery, &c.

The *commerce* of England is fully commensurate with her manufacturing greatness; every sea is traversed by her vessels, every land visited in search of new markets and new objects of merchandise. Her merchant navy, with that of the Channel Islands and Man, exceeds 16,000 vessels, with an aggregate tonnage of 2,000,000, and carry upwards of 110,000 men. In 1843 there were 546 steam-vessels belonging to England, with an estimated tonnage of 72,024. The internal communication of the country is carried on by means of 26,000 miles of well-macadamised turnpike-roads, which traverse it in every direction; by canals, making an aggregate length of 2200 miles; and by railways, of which upwards of 4000 miles have been already laid down, or are in course of completion. The value of railway investments in Great Britain have been estimated at £200,000,000; mining companies, £10,000,000; gas companies, £6,415,295; and assurance companies, at £6,000,000.

GOVERNMENT—ADMINISTRATION.

Respecting the political constitution, laws, religion, and education of England, the reader is referred to our article on the CONSTITUTION AND RESOURCES OF THE BRITISH EMPIRE, in which he will find those statistics and details, any notice of which in this place would lead only to unnecessary repetition, at the expense of matter which cannot be elsewhere adverted to.

For *administrative purposes*, the country is divided into fifty-two counties, forty of which form England proper, and twelve belong to Wales. Most of these are subdivided into hundreds; some into wards; York into ridings and wapentakes; Kent into lathes; and Sussex into rapes, which are again divided into hundreds. Judicially, the whole form 7 circuits; municipally, 25 cities and 172 boroughs; and ecclesiastically, 11,077 parishes. In the following table the counties are arranged alphabetically, with their areas, their population according to the census of 1841, and the

chief or county town; which, however, is not always the largest or most populous:—

Counties.	Acres.	Population.	Chief Towns.
Anglesea,	173,440	50,891	Beaumaris.
Bedford,	296,320	107,936	Bedford.
Berks,	481,280	161,147	Reading.
Brecknock,	462,560	55,608	Brecon.
Buckingham,	472,320	155,983	Buckingham.
Caermarthen,	623,360	106,326	Caermarthen.
Caernarvon,	348,160	81,093	Caernarvon.
Cambridge,	548,480	164,459	Cambridge.
Cardigan,	482,000	68,766	Cardigan.
Cheshire,	672,280	395,660	Chester.
Cornwall,	851,200	341,279	Launceston.
Cumberland,	974,720	178,038	Carlisle.
Denbigh,	405,120	88,866	Denbigh.
Derby,	657,920	272,217	Derby.
Devon,	1,654,400	533,460	Exeter.
Dorset,	643,840	175,043	Dorchester.
Durham,	702,080	324,284	Durham.
Essex,	981,120	344,979	Colchester.
Flint,	156,160	66,919	Flint.
Glamorgan,	506,880	171,188	Cardiff.
Gloucester,	805,120	431,383	Gloucester.
Hampshire,	1,040,000	355,004	Winchester.
Hereford,	552,320	113,878	Hereford.
Hertford,	403,200	157,207	Hertford.
Huntingdon,	238,080	58,549	Huntingdon.
Kent,	996,480	548,337	Maidstone.
Lancashire,	1,130,240	1,667,054	Lancaster.
Leicester,	515,840	215,867	Leicester.
Lincoln,	1,671,040	362,620	Lincoln.
Merioneth,	434,320	39,332	Dolgelly.
Middlesex,	180,480	1,576,636	LONDON.
Monmouth,	317,440	134,355	Monmouth.
Montgomery,	536,960	69,319	Montgomery.
Norfolk,	1,295,360	412,664	Norwich.
Northampton,	650,240	199,228	Northampton.
Northumberland,	1,197,440	250,278	Alnwick.
Nottingham,	535,680	249,910	Nottingham.
Oxford,	483,840	161,643	Oxford.
Pembroke,	390,400	88,041	Pembroke.
Radnor,	272,640	25,356	New Radnor.
Rutland,	95,360	21,302	Oakham.
Shropshire,	859,520	239,048	Shrewsbury.
Somerset,	1,052,800	435,982	Taunton.
Stafford,	757,760	510,504	Stafford.
Suffolk,	969,600	315,073	Ipswich.
Surrey,	485,760	582,678	Southwark.
Sussex,	938,240	299,753	Lewes.
Warwick,	574,080	401,715	Warwick.
Westmoreland,	487,680	56,454	Appleby.
Wilts,	874,880	258,733	Salisbury.
Worcester,	462,720	233,336	Worcester.
York,	3,735,040	1,591,480	York.
Total,	36,999,680	15,906,741	

Note.—England derives its name from the *Angles*, one of the Saxon tribes who settled in its southern districts about the middle of the fifteenth century. As might be expected from its history, its topographical nomenclature is a compound of British, Roman, Saxon, and Norman. The following prefixes and affixes are of frequent occurrence:—*Ton*, town; *borough*, or *bury*, town; *ville*, town; *ble* or *by*, habitation; *ham*, home or dwelling; *stock* or *stow*, residence; *thorpe*, a number of dwellings or village; *caer*, fort or castle; *caster* or *chester*, fortified camp; *minster*, abbey or church; *llan*, place of meeting or church; *eccles*, church; *hithe*, port; *don* or *dun*, hill; *pen*, height; *ness*, promontory; *ley* or *leigh*, meadow plain; *burn*, stream or boundary; *aber*, confluence or mouth of a river; *ford*, shallow portage; *wick*, *wick*, bend of a river, or dwelling by.

REMARKABLE SCENERY—NATURAL CURIOSITIES.

Lake Scenery.—The south-west part of the county of Cumberland and the north-west part of Westmoreland comprehend a range of lofty mountains—Skiddaw, Saddleback, Helvellyn, and some others of scarcely less note—amidst which lie the lakes for which this district of England has long been celebrated. The largest of these are Ulleswater, Thirlmere, Derwentwater, and Bassenthwaite; but some of less size—as Buttermere, Crummockwater, Loweswater, Ennerdale, Wastwater, and Devock Lake—are scarcely less admired. The vales or passes amongst the hills likewise contain much beautiful scenery of a wild character, although perhaps only traversed by a brawling mountain rill. As already mentioned, it is the combination of alpine wildness and grandeur, with the soft scenery which reposes in clothed slope and mirror-like lake at the bottoms of the hills, that gives the Cumberland scenery its principal charm. Ulleswater, which extends into Westmoreland, is thought to possess the greatest beauty: it is about 9 miles in length, but nowhere more than 1 in breadth. Derwentwater (often termed Keswick Lake, from its vicinity to the town of Keswick), which measures 3 miles in length by 1½ in breadth, is only inferior to Ulleswater. Mrs Radcliffe, the eminent novelist, describes it as having peculiar charms, both from beauty and wildness. 'The whole is seen at one glance, expanding within an amphitheatre of mountains, rocky but not vast, broken into many fantastic shapes. The precipices seldom overhang the water, but are ranged at some distance; and the shores swell with woody eminences, or sink into green pastoral margins. The bosom of the lake is studded by several small but well-wooded islands.'

Amongst the *passes*, that of Borrowdale is the most remarkable: it is a narrow chasm opening from the centre of the amphitheatre which terminates the expanse of Derwentwater, and traversed by the vehement little stream of the same name. Near the entrance of the pass is a detached mountain called Castle-Crag, with a peaceful village reposing at its foot; and opposite to Castle-Crag is the *Bowderstone*, a huge mass of rock, which has apparently fallen from the neighbouring cliffs, and round whose base the road is made to wind. It is computed that this enormous boulder is not less than 1800 tons in weight.

The lake scenery of Cumberland has by its beauty attracted a great number of permanent residents, whose villas enter pleasingly into its landscapes, and amongst whom the present age has seen several eminent literary men—Southey, Wordsworth, &c. It also attracts an immense number of tourists from all parts of the kingdom. The district usually called *the Lakes* may be said also to comprehend a small northern and nearly detached portion of Lancashire, where Windermere and Coniston Water are sheets rivalling in extent and beauty those of Cumberland.

Derbyshire Peak Scenery.—The termination of the great northern range in the north of Derbyshire, presents in that district a collection of rugged hills and narrow valleys, amidst which some of the most romantic scenery in England is to be found. A particular portion of it, near the village of Castleton, is termed the Peak Scenery, from a particular eminence or peak which attracts more than usual attention.

The Peak is approached through a rude and savage pass named *Winyats* (*q. d.* gates of the winds), flanked with precipices 1000 feet high. It is a limestone mountain, and perforated, as mountains of that kind of rock often are, with an immense cave. On the top are perched the remains of a castle, once the residence of a family descended from William Peveril, a natural son of the Conqueror. In the precipice below, above 600 feet from the top, is the entrance of the cave, a flattish Gothic arch, 120 feet wide and 46 in height. Within this arch the cavern recedes about 90 feet. Here a company of twine-makers pursue their humble trade. At the extremity of the first cave, which alone enjoys any of the light of day, a low and narrow arch leads into a spacious opening called 'The Bell-house,' whence a path leads to the 'First Water.' This is a lake 42 feet in breadth, passing below a massive arch of rocks, in some places not more than 20 inches above the surface of the water. Laying himself flat along the bottom of a small canoe, the visitor with his guide shoots through below the depending rocks into an opening 220 feet in length, 200 in breadth, and 121 in height. At the farther extremity of this spacious cavern, the stream which flows along the bottom forms itself into what is called the 'Second Water,' near the end of which is a pile of rocks subjected to a perpetual copious dripping from the roof, and called 'Roger Rain's House.' Other passages and expansions succeed, till the cave ceases to

be passable at the distance of 2300 feet from the opening. On returning from his torch-lit adventure to the mouth of the cave, the visitor usually experiences a singular impression of novelty and delight from beholding again the surface of the daylight world.

The scenery adjacent to the neighbouring town of Buxton is also much celebrated. One of the most noted objects is *Elden's Hole*, a perpendicular opening, down which a line has been dropped to the extent of 2652 feet without finding the bottom. *Poole's Hole* is a cave remarkable for its magnificent stalactites. A succession of beautiful valleys, situated amidst rugged mountains, leads to the romantic one of *Matlock*, where the banks of the Derwent are bordered by extensive woods, interspersed with the boldest and most varied forms of rock. Of a wilder character is the celebrated *Dovedale*, where the River Dove traverses a pass of 2 miles in length, and of the most striking character. The sides of this short valley are chiefly composed of rocks of gray limestone, which, in their abrupt and towering ascent, assume innumerable fantastic forms—spires, pyramids, &c.—and are clothed with yew-trees, the mountain ash, and numerous mosses and lichens.

The *Isle of Wight*, situated off the coast of Hampshire, and measuring 23 miles by about 13, is celebrated both for its mild climate and its beautiful scenery. From the high open downs formed by a range of chalk hills in its centre, some delightful views, mingling the bold objects of the coast line with the sail-studded English Channel, are obtained. The south shore is the most noted for its romantic objects, the most remarkable of which is at *Undercliff*. Here a great chalk cliff has at one time been presented to the sea; but, afterwards undermined by the action of the waves, a large portion of it has fallen forward in vast fragments, leaving a new cliff at the distance of about half a mile from the shore. In the interval between the beach and the cliff, the fragments are scattered in confusion, many of them forming eminences of the most picturesque forms, while the intermediate spaces afford room for cottages and villas, and even at one place for a small rising town, nestling amidst the most beautiful shrubbery, natural and artificial. This district, when viewed from the sea, appears a series of gigantic steps, rising from the beach towards a great perpendicular wall. The cliff in several places opens in vast ravines, locally termed *chines*, which are usually clothed with a picturesque vegetation, and the most admired of which are those of Shanklin and Blackgang. Newport, the capital, is situated in a beautiful valley in the interior, adjoining the picturesque old castle of Carisbrooke. At the western extremity of the island are the celebrated *Needles*, a cluster of chalk rocks raising their splintery and rugged peaks high above the waters which rush and roll in the dangerous passages that lie between.

Scenery of Wales and Cornwall.—Wales has already been described as a mountainous region, the chief peaks of which somewhat exceed 3000 feet in height. It is visited by tourists from all parts of the kingdom, on account of the picturesque scenery with which it abounds, particularly in the northern district, or *North Wales*. Its hollows or vales contain none of those beautiful expanses of water which mix such softness with the grandeur of the Cumbrian scenery, but are traversed by impetuous rivers and torrents, according with the precipitous and savage character of the landscape. The vales of North Wales are deeper and narrower than those of South Wales; these expand in many instances into broad plains, affording scope for the operations of the agriculturist, and for the building of towns and villages.

A range of hills, of which *Snowdon* is the highest, traverses North Wales from south to north, terminating at Beaumaris Bay in the tremendous steep of *Penmanmawr*, whose hanging fragments threaten to bury him who travels by the difficult path which has been formed along its almost perpendicular sides. This hilly district comprehends a few *tarns*, or mountain lakelets, full of delicious fish. The general bleakness is delightfully relieved by the intervening vales, the largest of which is that of Clwyd in Denbighshire, 20 miles long by about 4 or 5 in breadth, and presenting a brilliant picture of fertility. Amongst the lesser vales, the most famed for beauty is that of *Llangollen*, 'where the Dee, winding through cultivated and pastoral scenes, presents at every step a varying landscape.' *Festiniog*, [illegible] which a number of streams unite to form a little river, amidst verdant and wooded scenes, is also celebrated by tourists.

Upon a hill north of Liskeard in Cornwall, the slopes of which are strewed with granite boulders, stands the curious pile called the *Cheese Wring*, composed of five flat round pieces of the same rock, laid one above another, the largest towards the top, so that the whole forms a kind of inverted cone, to the height of 15 feet. Dr Macculloch, the eminent geologist, explains the formation of this strange object as solely owing to natural causes. *Logging Stones*, of which there are several in the same county, are in like manner explained. The largest is one situated upon a cliffy promontory near the Land's End. It is a mass 17 feet in length, of irregular form, and believed to be about 90 tons in weight, resting by a slight protuberance upon the upper surface of the cliff, and so nicely poised, that a push from the hand, or even the force of the wind, causes it to vibrate. It appears that these logging stones are simply prismatic masses of the rock, which have been left in their present situation after adjoining masses of a similar character had been removed.

ANTIQUITIES, &c.

Perhaps the earliest objects of antiquity in England are the barrows or *tumuli* with which the Britons, like so many other uncivilised nations, were accustomed to cover the remains of the dead. Several specimens of these still exist, but many more have been destroyed and levelled with the soil. Their construction, contents, and other peculiarities are appropriately noticed under ARCHÆOLOGY in No. 98.

Druidical Remains rank perhaps next in point of antiquity. The most simple of these are *Cromlechs*, of which an unusual number is found in the island of Anglesea, once the chief seat of the Druids, who were the priests of British heathenism. A cromlech consists of a large slab of stone, placed flatwise, or in a sloping position, upon two upright ones. It seems to have formed an altar for human sacrifices. *Druidical circles* are more complicated. They usually consist of circles of huge stones placed on end, with in some instances connected lines or rows of similar stones, the whole forming objects at once rude and imposing. It is believed that they were the temples of the Druids. The most remarkable Druidical circle is that of *Abury*, six miles from Marlborough in Wiltshire: there is an outer circle, 1400 feet in diameter, composed of stones generally about 16 feet in height, with a distance of 27 between every two. There are small concentric circles within the large one, and in the centre of all is a cromlech or altar for human sacrifices, composed of one long flat stone, supported by two upright ones. Two straight avenues of approach, about a mile in length, were composed of similar blocks, and on the outside of the outermost circle there was a *vallum* or bank, the inner slope of which was perhaps a place for spectators. From the encroachments and carelessness of the neighbouring inhabitants during a long course of ages, this curious relic of the British people is much dilapidated. Another Druidical circle of great note is that of *Stonehenge* upon Salisbury Plain, a district also presenting many tumuli and other vestiges of the Britons. The Stonehenge temple, in its perfection, consisted of 140 stones, arranged in two concentric circles, the outermost 108 feet in diameter, with similar stones laid flatwise along the tops of the upright stones. The blocks which remain are from 18 to 20 feet high, and about 7 feet broad. Within the inner circle are two oval ranges, supposed to have formed the *adytum* or cell, and which consist of stones about 30 feet in height. The remains of this

stupendous temple, fragments as they are, still produce a sensation of awe upon the mind of the beholder.

Roman Remains are now rare, and nearly obliterated. The roads formed by this people have in some instances been changed into our present comparatively broad and well-formed ways; in other cases, slight traces of their original pavement, which generally consisted of large stones forming a causeway, are to be found. Between Newcastle and Carlisle are the remains of the two walls built respectively by the Emperors Adrian and Severus, in 120 and 210, to keep out the northern barbarians: the first being a high mound of earth, and the second a rampart of stone, 68½ miles long, running parallel to the first. All the towns, the names of which terminate in *chester* or *cester*, are considered as having been originally Roman stations. Near St Albans are the remains of the walls which once surrounded the Roman town of *Verulamium*, the site of the town itself having long been subjected to the plough. In making excavations in London and other places, remains of Roman buildings—temples, baths, &c.—are frequently brought to light, proving, contrary to an affected notion now somewhat prevalent, that Roman civilisation had made considerable progress in our island.

Several of the small churches built soon after the introduction of Christianity still exist, and continue to be used as parish churches. The larger churches connected with monastic establishments, and the cathedrals, which were the seats of bishops, took their rise at a later period, chiefly during the twelfth and thirteenth centuries. This was a time when an enthusiasm existed for founding and endowing monasteries and churches. To it we are indebted for many superb minsters, the solemn beauty of which continues to be a proud possession of our land. Westminster Abbey, York Minster, and the cathedrals of Winchester, Lincoln, Gloucester, Canterbury, Lichfield, and Salisbury, may be instanced as particularly august specimens of the Gothic style in which all ecclesiastical structures were then built. There are also many ruinous remains of the great abbacies of the middle ages: those of Tintern, near Monmouth; Glastonbury, near Wells; and Bury St Edmund's, are of famed beauty. A kindred class of structures exist in what are called *crosses*, which consist generally of an elegant tapering Gothic erection, with a small shrine below, and were in most instances erected to hallow the spot on which the remains of venerated persons rested on their way to the tomb.

Of the huge castles built by the Norman nobility and by the sovereigns during the first few centuries after the Conquest, many specimens still exist, but few which are not in ruins. The Tower of London, built by the Conqueror himself, is an entire and most superb example of this class of structures. Conway and Caernarvon Castles, which, with several others, were raised to overawe the then independent principality of Wales, are also noble specimens. Others may be found in the north—as Lancaster, Carlisle, Newcastle, and Rugby. They usually consist of a great square tower, with ranges of lesser towers, and the whole surrounded by thick and lofty walls, beneath which there was generally a moat or wet ditch. Dover Castle, placed on a lofty cliff overlooking the English Channel, and still kept in good order, is a peculiarly interesting specimen of the Norman fortress.

England abounds in mansions in various styles, the seats of her nobility and gentry. Some of these reach a high degree of splendour, both in architecture and internal furnishing, not to speak of the delightful sylvan domains by which they are generally surrounded.

CITIES—TOWNS—PORTS.

It has already been seen that a large part of the population of England is collected in cities and towns of considerable size. Some of these may be classed under the separate heads of manufacturing and commercial towns, while others are either university towns, naval stations, cathedral towns, or towns for summer recreation or the residence of persons in independent circumstances. The cities and towns of England are of great number, and though often of plain exterior, include an immense amount of wealth. The prevalence of brick in domestic buildings, and of the smoke arising from coal fires, give a peculiar character to English towns. In all, however, there are numerous churches and other public edifices, and in some there are many streets built entirely of stone :—

The Metropolis.

London, the capital of England, and metropolis of the British Empire, is situated on the banks of the Thames, in the counties of Middlesex and Surrey. On the spot now occupied by *the city*, or more ancient part of the metropolis, which is on the left or northern bank of the Thames, a town had been built and possessed by the Romans eighteen centuries ago, and from that period it has constantly been the seat of an increasing and busy population. Its chief increase and improvement, however, have been since the great fire in 1666, which destroyed a large number of the old streets and public edifices. The original city was fortified by a wall, which has long since been removed, to allow of an expansion into the adjacent fields; and as the number of houses and streets without the old line of wall has at length greatly exceeded those within, *the city* is like a mere kernel in the mass. The extending city has in time formed a connection with various clusters of population in the neighbourhood, including Westminster on the west, and by means of bridges, Southwark and Lambeth on the south. The whole metropolis, reckoning by continuous lines of houses, extends to a length of nearly 8 miles, by a breadth of from 6 to 7; and it is computed that the whole includes at least 35 square miles!

The following is the list of districts included within what is usually described as London, with their population in 1831:—London within the walls, 57,635; London without the walls, 67,878; city of Westminster, 202,080; out-parishes within the bills of mortality, 761,348; parishes not within the bills of mortality, 293,567; Southwark, 91,501: total, 1,474,069. London within the walls contains ninety-eight parishes, most of which are very small in size, but at one time were very populous. The practice of living out of town, and of using the dwellings of the city for warehouses, has greatly lessened the population in latter times. Without the walls, there are eleven parishes, independently of the parishes in Westminster and Southwark. The largest and most populous of the suburban parishes is Marylebone. Adjoining the suburban, though really town parishes, there are various country parishes, as Greenwich, Deptford, Camberwell, Clapham, Westham and Stratford, Hammersmith, Hampstead, &c., containing an aggregate population of 129,480; and adding this number to the above 1,474,069, there was within a compass of about eight miles round London, in 1831, a population of 1,584,042, which in 1841 had increased to 1,873,676, and which now probably exceeds 2,000,000. Within the last fifty years, London has doubled in extent, and at present is rapidly increasing on all sides, particularly on the north, west, and south. Of the population in 1841, 168,000 were domestic servants; 28,000 boot and shoemakers; 23,000 tailors; 21,000 dressmakers and milliners; 20,000 clerks; 18,000 carpenters and joiners; 16,000 laundry-keepers, washers, and manglers; 13,000 porters, messenger and errand boys; 11,000 painters, plumbers, and glaziers; 8000 cabinetmakers and upholsterers; 6600 bricklayers; 6000 butchers; 6600 printers; 7000 seamen; 5000 grocers and tea-dealers; 9000 bakers; 6700 blacksmiths; 5400 booksellers, binders, and publishers; 4000 engineer and engine-workers; 4500 tavern-keepers and victuallers; 3800 warehousemen and women; 3800 general merchants; and so on, showing the very miscellaneous nature of the trade upon which the metropolis depends.

The increase of London to its present enormous size, has been promoted by certain highly-favourable cir-

cumstances. First, it has for ages been the capital of England, and seat of the legislature and court; and since the union with Scotland and Ireland, it has become a centre also for those parts of the United Kingdom. Being, therefore, a point of attraction for the nobility, landed gentry, and other families of opulence from all quarters, a vast increase of population to minister to the tastes and wants of these classes has been the result. While deriving immense advantages from this centralising principle, London has been equally, if not far more, indebted to its excellent situation on the banks of a great navigable river, and in a fine part of the country. As already mentioned, London proper, or the greater part of the town, stands on the left bank of the Thames, on ground rising very gently towards the north; and so even and regular in outline, that among the streets, with few exceptions, the ground is almost flat. On the south bank of the river, the ground is quite level, rather too much so; and on all sides the country appears very little diversified with hills, or anything to interrupt the extension of the buildings. The Thames, that great source of wealth to the metropolis, is an object which generally excites a lively interest among strangers. It is a placid, majestic stream, rising in the interior of the country at the distance of 138 miles above London, and entering the sea on the east coast about 60 miles below it. It comes flowing between low, fertile, and village-clad banks, out of a richly-ornamented country on the west, and arriving at the outmost houses of the metropolis, a short way above Westminster Abbey, it pursues a winding course between banks thickly clad with dwelling-houses, warehouses, manufactories, and wharfs, for a space of eight or nine miles, its breadth being here from a third to a quarter of a mile. The tides affect it for fifteen or sixteen miles above the city; but the salt water comes no further than Gravesend, or thirty miles below it. However, such is the volume and depth of water, that vessels of seven or eight hundred tons reach the city on its eastern quarter at Wapping. The nett customhouse duty collected at the port in 1844 amounted to the amazing sum of £11,197,981, being fully one-half of the entire customs' duties of the United Kingdom!

London, from the want of stone in all the eastern districts of England, is essentially a *brick-built town*. To a stranger, it appears to consist of an interminable series of streets of moderate width, composed of dingy-red brick houses, which are commonly four storeys in height, and seldom less than three. The greater proportion of the dwellings are small. They are mere slips of buildings, containing in most instances only two small rooms on the floor, one behind the other, often with a wide door of communication between, and a wooden stair, with balustrades, from bottom to top of the house. It is only in the more fashionable districts of the town that the houses have sunk areas with railings; in all the business parts, they stand close upon the pavements, so that trade may be conducted with the utmost facility and convenience. Every street possesses a smooth flagged pavement at the sides for foot passengers; while the central parts of the thoroughfares are causewayed with square hard stones, or paved in some other way equally suited to endure the prodigious tear and wear created by the horses and vehicles passing along them. In the central and many other principal streets of London, the ground storeys of the houses are generally used as shops or warehouses. When the object is retail traffic, the whole range of front is usually formed into door and window, so as to show goods to the best advantage to the passengers. The exhibition of goods in the London shop-windows is one of the greatest wonders of the place. Everything which the appetite can desire, or the fancy imagine, would appear there to be congregated. In every other city there is an evident meagreness in the quantity and assortments; but here there is the most overwhelming abundance.

The flowing of the Thames from west to east through the metropolis, has given a general direction to the lines of streets; the principal thoroughfares are in some measure parallel to the river, with the inferior at least shorter, streets branching from them. In passing the town lengthwise, or from east to west, the two great leading thoroughfares at a short distance from each other, but gradually diverging at their eastern extremity. It is a matter of general complaint that there are so few great channels of communication through London both lengthwise and crosswise; for the inferior streets, independently of their complex bearings, are much too narrow for regular traffic. According to the accounts last taken, the entire metropolis contained 13,936 separate streets, squares, courts, alleys, &c. each with a distinct name. Oxford Street, the longest in London, is 2304 yards in length, and numbers 225 houses on each side.

Without particular reference to municipal distinctions, London may be divided into four principal portions — the city, which is the centre, and where the greatest part of the business is conducted; the east end, in which is the port for shipping; the west end, or Westminster, in which are the palaces of the Queen and royal family, the Houses of Parliament, Westminster Abbey, and the residences of the nobility and gentry; the Surrey division, lying on the south side of the Thames, and containing many manufacturing establishments and dwellings of private families. Besides these, the northern suburbs, which include the once detached villages of Stoke-Newington, Islington, Hoxton, St Pancras, Pentonville, Somer's Town, and Paddington, and consist chiefly of private dwellings for the mercantile and higher classes, may be considered a peculiar and distinct division. It is, however, nowhere possible to say exactly where any one division begins or ends. Throughout the vast compass of the city and suburbs there is a blending of one division with those contiguous to it. In the business parts there are lines or clusters of neat dwellings, and in the parts devoted to retirement there are seen indications of business. The outskirts on all sides comprise long rows or groups of detached villas, with ornamental flower-plots; and houses of this attractive kind proceed in some directions so far out of town, that there seems no getting beyond them into the country. From the Surrey division there extend southwards and westwards a great number of these streets of neat private houses, as, for instance, towards Walworth, Kennington, Clapham, Brixton, &c.; and in these directions lie some of the most pleasant spots in the environs of the metropolis.

Manufacturing Towns.

At the head of these stands *Manchester*, the chief seat of the principal manufacture of England—that of cotton. This town is situated on the river Irwell, in the south-east district of Lancashire, at the distance of 182 miles from London. Inclusive of Salford, a separate municipality on the other side of the Irwell, and also comprehending a few connected villages, Manchester contained in 1831 a population of 227,808, and in 1841, 296,183. The ground on which the town stands is a perfect level, and from whatever side it is approached, its crowd of spires, towers, manufactories, and warehouses, appears mingling with the smoke that hangs over it. The older part of the town clusters round the collegiate church, an elegant and spacious structure of the time of Henry VII., or extends in the ancient street called Deansgate. The busiest commercial street is Market Street, and the most elegant is Mosley Street. The town contains most of the usual public buildings to be found in one of its size—a Town-Hall, infirmary, prison, Exchange, &c. besides several institutions of a literary and scientific character; and several of these buildings, particularly the two first, are of remarkable elegance. A botanic garden and public park in the outskirts of the town, are great ornaments, and form most delightful as well as instructive places of recreation.

The factories of Manchester exceed 160 in number: they employ between 35,000 and 45,000 persons, and steam enginery equal in power to 6000 horses. About four-fifths of the cotton manufacture of the kingdom centres in Lancashire, and of this a large proportion is confined to Manchester—there being in 1844 no fewer than 1724 cotton-mills, employing 197,460 hands. The woollen, linen, and silk trade, particularly the last, and many smaller manufactures, as of hats, pins, umbrellas, &c., are also carried on to a large extent in this town. It may be added, that the making of machinery has of late years become a thriving trade in the township. The town is also the centre of several railway lines, and by means of these, the Irwell, and numerous canals, it transports and receives goods to and from every part of the kingdom.

The above may be considered as an outline of this great seat of manufacturing and commercial industry. Fully to describe the bustle of wagons and human beings on its streets, to detail the vast mercantile transactions in which it is engaged, or describe its numerous factories and workshops of various kinds, would require a separate volume. In the way of details, we may transcribe a few paragraphs from a local work published a few years ago under the title of 'Manchester as it Is:'—

'Many of the mills are immense buildings, raised to the height of six, seven, and eight storeys, erected at an expense of many thousands of pounds, and filled with machinery costing as many more. The capital sunk in a single mill will sometimes be £50,000, and frequently is as much as £100,000. Some of the mills contain nearly 2000 hands. A visit to one of the largest mills, if an introduction can be procured, is a gratifying treat. The rooms are kept in the most perfect state of cleanliness, and the strictest order and regularity prevail. Every operation is performed by rule, and the subdivision of labour is carried out in the most minute manner. The mills and factories are of various sorts—namely, cotton spinning-mills, silk spinning-mills, woollen spinning-mills and factories, small-ware factories, and power-loom weaving factories.

Amongst the cotton-mills, one of extraordinary extent, belonging to Messrs Birley & Co., is situated in the suburb called Chorlton-upon-Medlock. It consists of a group of buildings, upon which, including machinery, several hundred thousand pounds have been sunk. The number of hands employed by this firm is 1600, whose wages annually amount to the sum of £40,000. The amount of moving power is equivalent to the labour of 397 horses. The number of spindles in the mills is about 80,000. The annual consumption of raw cotton is about 4,000,000 lbs. weight! One room alone contains upwards of 600 power-looms. In the establishments called small-ware mills, the articles of cotton, worsted, and silk tapes, are very extensively manufactured. Some idea of the extent to which tape manufacture is carried on in Manchester, may be formed from the fact, that at the works of Messrs Wood and Westheads, upwards of 1,240,000 yards of goods, not exceeding three inches in width, and composed partly or entirely of cotton, linen, silk, or worsted, are woven in *one week*, or upwards of 35,227 *miles* in *one year!*

One of the principal works in the department of steam-engine making and engineering, is that belonging to William Fairbairn, Esq., situate in Canal Street, Great Ancoats Street. In this establishment the *heaviest* description of machinery is manufactured, including steam-engines, water-wheels, locomotive-engines, and mill-gearing. There are from 550 to 650 hands employed in the various departments; and a walk through the extensive premises, in which this great number of men are busily at work, affords a specimen of industry, and an example of practical science, which can scarcely be surpassed. In every direction of the works the utmost *system* prevails, and each mechanic appears to have his peculiar description of work assigned, with the utmost economical subdivision of labour. All is activity, yet without confusion. Smiths, strikers, moulders, millwrights mechanics, boilermakers, pattern-makers, appear to attend to their respective employments with as much regularity as the working of the machinery they assist to construct.

In one department mechanics are employed in building those mighty machines which have augmented so immensely the manufacturing interests of Great Britain—namely, steam-engines. All sizes and dimensions are frequently under hand, from the diminutive size of 8 horses' power, to the enormous magnitude of 400 horses' power. One of this latter size contains the vast amount of 200 tons or upwards of metal, and is worth, in round numbers, from £5000 to £6000. This extensive concern forwards its manufactures to all parts of the world. The stranger is told, on inquiry, that *this* article is for Calcutta, *that* for the West Indies; this for St Petersburg, that for New South Wales; and there are, besides, men belonging to it *located* in various parts of Europe, who are employed, under the direction of Mr Fairbairn, in superintending the erection of work manufactured on these premises.'

Leeds, the chief town for the manufacture of cloths, is situated in the West Riding of Yorkshire, on a slope gently rising from the River Aire, at a distance of 189 miles from London, with which, as well as with the chief towns of the kingdom, it is now connected by railway. It contains a few streets of handsome houses; but as in many other English manufacturing towns, utility appears to be more in contemplation than ornament or elegance. The population in 1831 was 123,393; in 1841, 151,063. There are some goodly public structures, as a court-house, commercial buildings, theatre, &c., and the town enjoys the benefits of a literary and philosophical society, an institution for the promotion of the fine arts, and several public libraries.

Leeds is the centre of a large district devoted to the making of mixed and white cloths. Cloths of light fabric, and blankets and carpets, are also made here in considerable quantity; but the mixed and white cloths form the staple of the business of the district. The mode in which these are sold in Leeds, gives occasion for the existence of two public buildings of a most peculiar nature. They are called respectively the Mixed Cloth Hall and the White Cloth Hall. A description of the former, from a popular work, will convey an idea of both:—'The Mixed Cloth Hall was erected in 1758, at the general expense of the merchants. It is a quadrangular edifice, surrounding a large open area, from which it receives the light abundantly, by a great number of lofty windows; it is 128 yards in length and 66 in breadth, divided in the interior into six departments, or covered streets, each including two rows of stands, amounting in number to 1800, held as freehold property by various manufacturers, every stand being marked with the name of the proprietor. This hall is exclusively appropriated to the use of persons who have served a regular apprenticeship to the trade or mystery of making coloured cloths. The markets are held on Tuesdays and Saturdays, and only for an hour and a-half each day, at which period alone sales can take place. The market-bell rings at six o'clock in the morning in summer, and at seven in winter, when the markets are speedily filled, the benches covered with cloth, and the proprietors respectively take their stands: the bell ceasing, the buyers enter, and proceed with secrecy, silence, and expedition, to bargain for the cloth they may require, and business is thus summarily transacted, often involving an exchange of property to a vast amount. When the time for selling is terminated, the bell again rings, and any merchant staying in the hall after it has ceased, becomes liable to a penalty. The hall is under the management of fifteen trustees, who hold their meetings in an octagonal building, erected near the entrance to this hall.'

Huddersfield, with a population of 25,000, *Wakefield* (15,000), *Saddleworth* (17,000), *Halifax* (20,000), and *Bradford* (34,000), all in Yorkshire, and *Rochdale* (67,000) in Lancashire, are other towns noted for their

concern in the cloth manufacture, but of inferior population, and not distinguished by any remarkable features. *Axminster* (3,000), *Kidderminster* (14,000), *Ashton*, and *Wilton*, are the chief seats of the carpet manufacture. *Bradford* in Wiltshire, is distinguished for superfine cloths.

Birmingham, the chief town in the kingdom engaged in metallic manufactures, is situated in Warwickshire, at the distance of 109 miles from London. The lower part of the town consists chiefly of old buildings, is crowded with workshops and warehouses, and is inhabited principally by manufacturers; but the upper part has a superior appearance, consisting of new and regular streets, and containing a number of elegant buildings. Amongst the public buildings, the Town-Hall calls for particular notice, being a magnificent structure of the Corinthian order, in the proportions of the temple of Jupiter Stator at Rome. The population of Birmingham in 1831 was 146,986; in 1841, 181,186; being nearly all engaged in trade and manufactures.

Amongst the principal manufactures are buttons in immense variety, buckles, cloak-pins, and snuff-boxes; toys, trinkets, and jewellery; polished steel watch-chains, corkscrews, &c.; plated goods for the dining and tea-table, now in the way of being superseded by similar goods of mixed metal; japanned and enamelled articles; brass-work of every description; swords and fire-arms; medals and coins of various kinds; copying machines and pneumatic apparatus; grates, fire-irons, gas-light burners, nails, and steel-pens. Besides almost every metallic article which can be considered as curious, useful, or ornamental, cut crystal is produced to a large extent, while certain branches of the cotton trade connected with hardware, as the making of the cloth for umbrellas, braces, girths, and the like, have also fixed themselves here, in order to facilitate the preparation of these articles.

The operations of the Birmingham manufacturers are carried on chiefly by means of foundries, rolling-mills, die-stamping machines, and turning-lathes. From the foundries proceed all heavy iron goods, and even a considerable quantity of small wares, though the work required in trimming these articles after they leave the sand, causes a constant tendency towards the use of the die-stamp in preference. By the latter machine, not only are buttons and other small articles produced, but likewise complicated decorative articles of many various kinds, to which it might be supposed that the process was inapplicable. The rolling-mill is a ponderous engine for pressing out ingots of metal into sheets of requisite thinness. The lathe, a conspicuous machine in the workshops of Birmingham, is used for the preparation of articles of correctly circular, and also of oval form. It is usually driven by steam; and in many instances this power is not generated in the premises of those who use it, but is obtained upon rental from some steam-engine kept by a different individual in the neighbourhood.

To give an idea of the extent of some branches of trade, and the activity of some kinds of machinery at Birmingham, it may be stated that at the pin-works, some years ago, 12,000 pins could be cut and pointed, and 50,000 pin-heads made from the wire, in an hour; that there is a coining-mill which produces between 30,000 and 40,000 pieces of coin in the same time; and that from 1805 to 1818, 5,000,000 stands of arms were made for public and private service. The making of steel-pens, which, before 1821, was scarcely known, is now a great manufacture. Probably not less than 10,000,000 are made annually. There is one individual in the trade who employs 250 persons, and consumes every year upwards of forty tons of metal. The article was originally sold at the rate of one shilling each pen; and now, from improvements and facilities in the manufacture, 144 are sold at the same money.

Sheffield, in the West Riding of Yorkshire, ranks only second to Birmingham as a seat of metallic manufactures. In 1841 it contained 109,597 inhabitants, great part of whom are engaged in the business for which Sheffield is remarkable. The situation of the town, upon a swelling piece of ground near the confluence of the Sheaf and Don, gives it health and cleanliness; but only the newer streets and suburban villas are neat, and the town is constantly involved in the smoke arising from the manufactories. A music-hall, post-office, and medical hall, together with a building called the Cutlers' Hall, in which the members of that trade meet for an annual banquet, are the chief public buildings boasting of any elegance of exterior.

Sheffield was famous in the middle ages for producing knives and arrow-heads. From such small beginnings, it advanced in the course of ages to its present distinction. An immense quantity of knives, scissors, implements of husbandry, and surgical and mathematical instruments, is now made in it. The manufacture of plate, and of goods in imitation of it, as also of carpenters' tools, printing types, haircloth, and many other articles, is carried on to an immense extent. The manufactures of Sheffield have the peculiarity of being chiefly in the hands of men of moderate capital and limited business, though there are also a few houses which engross a vast quantity of the principal trade. The establishments for the grinding and polishing of cutlery are among the most striking objects of curiosity to a stranger; and the show-room of the Messrs Rogers, cutlers to her Majesty, is a splendid museum, where all the local manufactures may be seen, of the best quality, and in the finest order.

Coventry, an ancient city in Warwickshire, 91 miles from London, is a great seat of the manufacture of ribbons, and also of watches. Some other manufactures, carried on to a great extent in the last century, including gauzes and calimancoes, have declined, leaving the above alone flourishing. The population in 1831 was 27,070; in 1841, 30,179; all except a small portion being engaged in trade and manufactures.

Coventry is an ancient town of note, and contains, besides some good modern public buildings, an old church of remarkable beauty as a specimen of Gothic architecture, and a very curious old hall (St Mary's Hall), used for festive purposes, having a grotesquely-carved oak roof, and a piece of tapestry, wrought in 1450, measuring 30 feet by 10, and containing 80 figures. The town was remarkable in early ages for the performance of the grotesque religious dramas called Mysteries, and for the shows and pageants which took place in celebration of the visits of royal personages. One pageant of an extraordinary character has been performed annually ever since the reign of Charles II. It is designed to commemorate a real or imaginary incident, which is thus related:—Leofric, Earl of Mercia, who possessed the property of the tolls and services of Coventry, exacted his dues so rigidly, that the inhabitants were greatly aggrieved, and at length Godiva, his pious wife, became their advocate. The earl, wearied by her solicitations, promised to grant her request, if she would ride naked through the town at mid-day. His terms, according to the legend, were accepted, and the countess rode through the town with no covering but her flowing tresses. It is added, that she had modestly commanded every person to keep within doors and away from the windows, on pain of death; but that one person could not forbear taking a glance, and lost his life for his curiosity. The procession commemorative of this occurrence includes the whole of the officials of the corporation, besides a female of easy purchase, who rides in a dress of linen, closely fitted to her limbs, and coloured like them. The curious person who stole the glance is called *Peeping Tom*, and a wooden image of him is to be seen on a house in the city.

Derby, the capital of Derbyshire, is an ancient, but now considerably modernised town, situated on a pleasant slope and irregular ground, on the south side of the vale of the Derwent, a river tributary to the Trent, pursuing a winding course through the county, and of great value in moving mill-machinery. Derby is the centre of one of the most productive and industrious districts in England, particularly as respects the manu-

facture of iron and other minerals. In the town and its neighbourhood there are large manufactories of lace, galloons, broad silks, silk hosiery, china, marble, jewellery, &c.; several extensive mills and manufactories have been built within these few years, and the machinery is equal to that of any other part of the kingdom. The town is irregularly built, and excepting some new erections in the corn-market, an infirmary, and an old church, with an elegant and conspicuous tower, it owns no public building worthy of remark. Though placed in the midst of a stone district, the houses are, as usual, built of brick. Within these few years, Derby has come prominently into notice by being on the line of the extended series of railways from Durham and Yorkshire to London. In 1840, the town received from Mr Joseph Strutt the munificent gift of a pleasure-ground, 11 acres in extent, and called by him the Arboretum. It is replenished with walks, seats, and everyway fitted up for promenading and recreation; it is opened freely two days of the week to all classes, and on other days is accessible upon payment of a small fee. The population of Derby, in 1831, amounted to 23,627; in 1841, 32,407.

Carlisle, which in early times was distinguished as a bulwark against the invasions of the Scottish armies, and as a cathedral city, has latterly acquired some note as a seat of manufactures, particularly in the department of cotton-spinning, calico-printing, and the weaving of ginghams, &c. The establishment of railway communication with Newcastle on the one hand, and with the west of England and with Scotland on the other, has within the last few years added to its mercantile prosperity. The population in 1831 was 20,006; in 1841 it was 23,012.

Commercial Towns.

At the head of this class stands *Liverpool*, next to London the greatest port in the empire. It is situated in Lancashire, on the east bank of the estuary of the Mersey, at the distance of 36 miles from Manchester, and 204 from London. The town extends for about three miles along the Mersey, and rather more than one mile inland, the situation enjoying a slight slope towards the river. On the side next the country, the town extends into numerous suburban districts, comprehending many villas, the residences of the more wealthy citizens. The rise of Liverpool has been surprisingly rapid. In the reign of Elizabeth, it was only a small village; in 1700, there were about 5000 inhabitants; in 1760, 26,000; in 1801, 77,653; in 1831, 165,175; and in 1841, 282,656.

Liverpool is the grand medium through which the trade of England with Ireland and with America is carried on; and a vast quantity of business is transacted by its merchants with the [illegible] of the Mediterranean, East Indies, and other p[illegible]rts of the world. The leading article of import is the [illegible]tton so extensively used in the manufactures of Lanca[illegible]hire, of which, in 1830, out of 793,695 bales imported into England, 703,200 were brought into Liverpool. The rural produce of Ireland—cattle, bacon, poultry, eggs, &c.—forms the import next in amount, the value in 1832 being about £4,500,000 sterling. The duties paid at the customhouse of Liverpool in 1844 were £4,365,526, being about a fifth of those paid throughout the whole kingdom. Its progress as a commercial port may be best traced from the number and burthen of the vessels which have entered the docks during the last thirty years, and which has been as follows:—In 1812, 4599 vessels, and 446,788 tonnage; in 1820, 7276 vessels, and 805,033 tonnage; in 1825, 10,837 vessels, and 1,223,820 tonnage; in 1830, [illegible]1,214 vessels and 1,411,964 tonnage; in 1835, 13,941 vessels, a[illegible] 68,426 tonnage; in 1840, 15,998 vessels, and 2,[illegible],98 tonnage; and in 1845, 20,521 vessels, and 3,016,531 tonnage. Liverpool is the great outlet for the goods manufactured in Lancashire and Yorkshire for sale in America. It is stated that one mercantile house in the American trade has in one year shipped and received goods to the amount of a million. In connection with the commerce carried on with the United States, there is a large transit of passengers. This was formerly carried on by means of a periodical series of well-appointed and quick-sailing vessels, usually termed *liners;* but since 1839, it has been conducted by means of steam-vessels. There are also steam-vessels conveying passengers daily to and from Dublin, Glasgow, and several Welsh ports, and only a little less frequently to other Irish harbours, and to several ports in the south-west of England.

The town, thus so extensively concerned in that commerce from which England derives its chief glory, presents many external features not unworthy of its mercantile character. Of these the chief is the *Docks*, a magnificent series of deep-water harbours, extending along the whole front of the town. When those now making and those proposed are finished, they will form an aggregate superficies of 203 acres, and 15 miles of quays! In the year ending June 24, 1840, the dues paid by vessels entering and leaving them was £197,477, 18s. 6d. The sight of these docks, bristling with numberless masts, and a scene of constant bustle from loading and unloading, fills a stranger with astonishment. In connection with the docks of Liverpool, we may mention those of *Birkenhead*, on the opposite side of the river, which, when finished, will afford an amount of shipping accommodation equal to 266 acres! The rise of Birkenhead, which may date its commercial existence from 1844, is wholly unparalleled in the history of this or any other nation.

The town contains several handsome streets, the chief being Castle Street and Dale Street. The Town-Hall and Exchange Buildings form an elegant and impressive assemblage of objects, having a bronze group in the intermediate court, commemorative of the death of Lord Nelson. The Customhouse is, as might be expected, a conspicuous edifice, but in a heavy style of architecture. The other public buildings—the Corn-Exchange, Lyceum, Athenæum, Royal Bank, the Assize Courts and St George's Hall, Wellington Rooms, Infirmary, &c. are goodly structures. There are upwards of twenty churches belonging to the establishment, many of them of much architectural beauty; a greater number of chapels belonging to various denominations of dissenters; with four Roman Catholic chapels, a meeting-house for Quakers, and a Jews' synagogue. The charitable institutions are numerous and well conducted. About 1500 patients are admitted annually into the infirmary. The Blue-Coat Hospital maintains and educates about 200 boys and girls. The school for the blind is on a most extensive scale. A handsome and spacious theatre, and a circus, are open during great part of the year. At the Royal Liverpool Institution, public lectures are given; and attached to it is a philosophical apparatus and a museum of natural curiosities. A botanic garden was established in 1801 at an expense of about £10,000. There is also a mechanics' institution of unusual extent and elegance, having been erected at an expense of £11,000. It includes schools for the young, as well as for the adolescent; and in the amount of its funds, and variety of the branches of knowledge taught, the establishment may be described as a kind of university for the middle and working-classes of Liverpool. Amongst the remarkable objects connected with the town, the ornamental Cemetery of St James's, formed out of an old stone quarry, is worthy of particular notice. It contains a statue of Mr Huskisson.

Bristol, a large seaport town, is situated partly in the county of Somerset and partly in that of Gloucester, at the junction of the r[illegible]ers Avon and Frome, and about ten miles from the junction of the former (which is navigable) with the Bristol Channel. It is one of a few English towns which possess the dubiously-acknowledged privilege of being counties in themselves, and it is also the cathedral city for the diocese of Bristol. Bristol is an ancient town, and has long enjoyed distinction as a seaport. Previous to the rise of Liverpool, to which it is now greatly inferior, it was the chief port

of the west of England. It still possesses considerable trade, and has further of late years become the seat of some active and thriving manufactures. In 1837, 386 ships, of 76,957 tons burthen, entered the harbour from foreign ports, besides 632 from Ireland; and in the same year, the customs duties collected were £1,153,109. Sugar, rum, and tea, are the chief foreign imports; while the chief exports are the native manufactures, and cotton, woollen, and linen goods. The chief native manufactures are soap, glass bottles, various metallic wares, drugs, dyes, and soda. It is honourable to Bristol that, as in its ancient days of supereminency as a port, it sent out the first English vessel across the Atlantic (that of Cabot, which discovered North America), so in these days it was the first to establish a communication by steam with the same continent. This was done in 1838, when the Great Western performed its first voyage. The population of Bristol in 1831 was 117,016; in 1841, 123,188.

Bristol is a well-built town, containing many spacious streets and squares, and extending into several beautiful suburban villages, as Clifton, Kingsdown, and St Michael's, where the residences of the wealthiest citizens are placed. The city contains many public structures of an interesting character. The cathedral is a fine old specimen of the Gothic architecture, and the church of St Mary Redcliffe is considered one of the most beautiful in England. The 'floating harbour,' formed out of the ancient beds of the two rivers, and surrounded by an immense extent of quay, is a most impressive object: the cost of its construction was not much less than £700,000. The Guildhall, Jail, Commercial Rooms, and Institution (which contains a library, hall for lectures, &c.), are other public buildings of an elegant appearance. Clifton, well known for its hot springs, contains a suite of baths and pump-rooms.

Newcastle-on-Tyne.—This ancient and prosperous seat of commerce occupies a somewhat incommodious situation on the left or north bank of the Tyne, at the distance of about ten miles from the sea. It is locally in the county of Northumberland, and by means of a bridge across the Tyne, is connected with the populous borough of Gateshead, in the county of Durham. It owes the origin of its name to Robert, the eldest son of William the Conqueror, who erected a fortress on the high bluff which here overhangs the river, and gave it the name of Newcastle. For ages the town was surrounded by strong walls, as a protection against invading Scottish armies: these, however, have disappeared, and in modern times the town has spread over the irregular acclivities and upland which border the river. The old fort or castle still exists, also the ancient Gothic church of St Nicholas, whose elegant turret is conspicuous at a considerable distance. The main cause of the increasing importance of Newcastle is its fortunate situation in the midst of the great coal-field of Northumberland and Durham, the produce of which finds a ready outlet by the Tyne. The plentifulness of coal has led to the establishment of numerous manufactures, among which are numbered cast and wrought iron, machinery, lead, glass, chemical productions, pottery, soap, and glue. The gross receipts at the customhouse, which includes also the port of Shields, for the year 1846, was £456,956. The older parts of the town near the river exhibit a busy scene of industry; here are crowded together ship and boat-building yards, wharfs for vessels, iron foundries and machine manufactories, and all the usual works connected with a great seaport. The streets in this quarter are dirty and smoky, but other parts of the town are of great elegance. Since 1834, by the extraordinary energy and taste of Mr Richard Grainger, a speculating architect, a large portion of the town has been taken down and rebuilt with handsome stone houses, amidst which are various public buildings, including a theatre, an Exchange, extensive markets, &c. Newcastle must be considered the metropolis of a rich and populous district, including Tynemouth, North and South Shields (all at the mouth of the Tyne), Sunderland, Durham, and Gateshead; and with these it is intimately connected by means of the river, railways, or otherwise. At Shields and Sunderland are the great depôts of shipping in the coal and other trades. Besides its remarkable manufacturing and commercial industry, Newcastle is distinguished for its philosophical and literary institutions, no other town of its kind possessing so many inhabitants of cultivated taste. In 1831, including the population of Gateshead, which was 15,177, Newcastle and its suburbs had a population of 68,790; in 1841, the population of Gateshead was 19,843; of Newcastle, 69,430—total, 89,273.

Hull (properly Kingston-upon-Hull) is situated at the confluence of the River Hull with the estuary of the Humber, in the East Riding of Yorkshire, of which district it is the principal town. It commands an extraordinary amount of inland navigation, not only by means of the Trent, Ouse, Derwent, and other branches of the Humber, but by means of canals connecting with those streams, and penetrating to the very heart of England. It is the principal outlet for the manufactures of York and Lancashire towards the continent of Europe, the chief seat of the northern whale-fishery, and one of the most important stations for steam-navigation in the island, having packets of that kind voyaging not only to London, Newcastle, Leith, and Aberdeen, besides many inland places in its own district, but to Rotterdam, Hamburg, and occasionally to some of the ports in what is more particularly called the north of Europe. Hull was a noted port so early as the reign of Edward I.; and in the seventeenth century it was a great state depôt for arms, on which account the possession of it in the time of the civil war became an object of much importance. The refusal of its governor, Sir John Hotham, to give it up at that time to Charles I., or even to admit his majesty within the gates, is a conspicuous incident in English history. For some years, owing to various circumstances, some branches of the commerce of the port have experienced a decline rather than an advance; but it is still a town of large trade. In 1829, 579 vessels, of 72,248 aggregate tonnage, belonged to Hull. For the accommodation of the shipping there is a splendid range of docks, with all the accommodations suitable for storing a vast quantity of merchandise. The population of the town in 1841 was 65,670.

Chester is one of the less important and less populous of the commercial towns of England. Such importance, however, as it possesses as a commercial town, is enhanced by its being a county town and cathedral city, and the residence of a considerable number of persons in independent circumstances. It is also remarkable for its antiquity and its historical associations, as well as for some local features of an unusual kind.

It is situated within a bend of the Dee, a few miles from the point where that river joins an estuary branching from the Irish Channel. The two principal streets cross each other at right angles, and the town is still surrounded by the massive walls which were originally designed to protect it from warlike aggression, but are now only useful as an agreeable promenade, from which some pleasant views of the surrounding country may be obtained. The streets are formed in hollows dug out of rock, so that the lowest floor of each house is under the level of the ground behind, though looking out upon the carriage-way in front. The paths for passengers are not here, as is usually the case, formed in lateral lines along the streets, but in a piazza running along the front of what in England is called the *first*, and in Scotland more correctly the *second* floor, of the houses. These piazzas, called in Chester *the Rows*, are accessible from the street by stairs at convenient distances. There are numerous shops entered from them, and they in some places still retain the massive wooden balustrades with which all were originally furnished, but for which, in other places, light iron railings have been substituted. Where the houses and balustrades are old, the effect is very curious and striking, and apt to awaken ideas of ancient usages and habits long passed away. The cathedral of Chester contains some curious

ancient architecture. The castle is a splendid modern building, on the site of the powerful fortress which was once of such importance as a check upon the Welsh: it contains the county court-house, jail, &c. The principal other buildings are the Halls built by the merchants to serve as marts, of which there are three, besides the Exchange. The bridge across the Dee is a remarkable object, being of one arch, with a span of 200 feet; it cost £40,000.

Chester was an important station of the Romans, from whom it derived the cross form of its two principal streets, and of whom many relics have from time to time been dug up. It retained its importance during Saxon and Norman times, and in the thirteenth and fourteenth centuries was a flourishing city, with a large maritime trade. It then declined, in consequence of natural obstructions to the navigation of the river. From the year 1328 downwards, it was remarkable for the annual performance of a peculiar class of theatrical representations, similar to those performed at Coventry, and termed Mysteries. To modern taste these would seem the most gross burlesque of sacred subjects; but so convinced were the clergy of those days of their edifying qualities, that a thousand days of pardon from the pope, and forty from the bishop of Chester, were granted to all who attended them. After a long period of declension, the trade of Chester was revived by the cutting of a new channel for the river, whereby vessels of 600 tons burthen were enabled to come to the quays near the town. The commerce, with the exception of a few ships which visit Spain, Portugal, the Mediterranean, and the Baltic, is chiefly confined to Ireland, whence an immense quantity of linen, hemp, flax, skins, and provisions, is imported. The exports of Chester are cheese (the staple production of the county), lead, coal, calamine, copper-plates, and cast-iron. Shipbuilding is carried on to a considerable extent, and there are some manufactures of inferior consequence. The population in 1831 was 21,363; in 1841, 22,961.

Southampton is an ancient, but considerably modernised town, the capital of Hampshire, and, next to Portsmouth and Plymouth, may be considered the chief outport on the south coast. It enjoys a situation at once pleasant and convenient, in a vale adjoining to the bay bearing its own name. In modern times, the town has been greatly improved and increased by the erection of lines of handsome streets in the environs, the residence of a respectable and leisurely population. Among the attractions of the neighbourhood are those of the New Forest, which almost adjoins the town, and a beach forming a pleasant bathing-place in summer: few sea-side towns are more salubrious or agreeable. With the Isle of Wight, at a few miles' distance, there is a constant communication by steamboats. The South-Western Railway, which terminates near the shore of the bay, has greatly advanced the interests of the town, by making it a depôt of traffic in connection with the metropolis; and there are now constructing, at a great cost, large wet-docks and wharfs for shipping. A considerable trade is already carried on with foreign countries, and the port is a main point of communication between England and Guernsey, Jersey, and Havre, in which, and some other respects, it is a rising rival of the neighbouring town of Portsmouth. The population in 1831 was 19,324; in 1841, 27,490.

University Cities.

Oxford, the chief of this limited class of cities, is the principal town in Oxfordshire, and is situated in a valley at the confluence of the Isis and Cherwell, at the distance of 58 miles from London. Besides being the seat of the celebrated university named from it, it is the seat of an episcopal see. Containing twenty colleges and five 'halls,' a cathedral, and thirteen elegant parish churches, besides the Radcliffe Library, the University Theatre, and several other elegant public buildings, all condensed into a small space, amidst streets some of which are straight and elegant, while none, except a few of an obscure character, are mean, Oxford appears to a stranger as beautiful externally as its historic character renders it venerable. The High Street, in which several colleges are situated, is generally acknowledged to be one of the finest streets in the world. The origin of the university is usually attributed, but upon no certain authority, to King Alfred. Oxford has certainly, however, been a famed seat of learning since the twelfth century. Each college and hall has its own students and teachers, revenues and regulations; yet they are all united under the government of one university. The officers by whom the university is immediately governed, are the chancellor, high steward, vice-chancellor, and two proctors. In addition to the private officers in each college and hall, who see that due order and discipline are preserved, and all the liberal sciences taught, there are twenty-three public professors of the several arts and sciences. In 1844, there were 5026 members on the books, one-third of whom, in their capacities as fellows, &c. were maintained by the revenues. The students wear a peculiar dress, varied according to their status in the college. They all live within the precincts of their respective colleges.

Cambridge is the chief town in Cambridgeshire, and is situated on the Cam, at the distance of 50 miles from London. It is also an elegant city, though less so than Oxford. The university has no certain date before 1229: it comprehends seventeen colleges, which in most respects are similar to those of Oxford. King's College Chapel, built in the reign of Henry VI., is considered the most beautiful structure in either of the two university towns.

Naval Stations.

Portsmouth, the principal rendezvous of the British navy, is situated on the west side of the Isle of Portsea in Hampshire. To the west of the island is the bay called Portsmouth Harbour, excelling every other on the coast of England for its spaciousness, depth, and security. The obvious utility of this harbour in such a situation caused it to be used at an early period as a station for shipping, and hence the rise of the town of Portsmouth on the narrow inlet by which it communicates with the English Channel. It is also to be observed that the strait between the mouth of this harbour and the Isle of Wight, forms the celebrated roadstead of Spithead, which is capable of containing a thousand sail at anchor in the greatest security. The original or old town of Portsmouth, surrounded by ancient walls; the modern suburban towns of Portsea and Southsea, respectively situated to the north and south of the original town; and the town of Gosport, on the opposite side of the inlet to the harbour, may all be said to form one cluster of population, probably numbering not less than 70,000. The beach opposite Southsea being well adapted for sea-bathing, has been the cause of that suburb or village becoming a watering-place of considerable note.

The docks, arsenal, building-yards, and all the various establishments concerned in the fitting-out and safe keeping of the national shipping, render Portsmouth an object of wonder to all who see it for the first time. The Dockyard includes the great area of 100 acres. The Smithery is a vast building, where anchors are wrought, weighing from 70 to 90 hundredweight each. On the Anchor-Wharf hundreds of these useful implements are piled up, ready for immediate service. The Ropery, where the cordage for the vessels is prepared, is three storeys high, 54 feet broad, and 1094 feet long. The Gun-Wharf is an immense arsenal, consisting of various ranges of buildings for the reception of naval and military stores, artillery, &c. The Small Armoury is capable of containing 25,000 stand of arms. There is a naval college, where a hundred scholars in time of war, and seventy in time of peace, are taught; thirty, who are the children of officers, being maintained and educated at the public expense. During war, the number of persons employed in the various establishments connected with the public service at

Portsmouth has amounted to 5000. The principal buildings connected with the arsenal and dockyards, are the commissioner's house, the government house, the victualling office, the port-admiral's house, and the naval and military barracks. The promenade along the fortifications forms one of the most agreeable features of the town. Amongst objects of curiosity we may specify the *Victory*, Nelson's flag-ship at Trafalgar; the Semaphore Telegraph; and the house (No. 110 High Street) in which the Duke of Buckingham was temporarily residing, when in front of it he was stabbed to death by Lieutenant Felton in 1628. The church of Portsmouth is a spacious Gothic structure, with a comparatively modern tower, useful as a landmark to seamen. There are various charitable, literary, and scientific institutions connected with the town.

Plymouth is another important naval station, besides being a thriving commercial town. It is situated at the head of the capacious haven of Plymouth Sound in Devonshire, on the east side of a tongue of land formed by the estuaries of the rivers Plym and Tamar, which here empty themselves into the sea. Essentially connected with Plymouth is *Devonport*, situated in the immediate neighbourhood, and properly an appendage of Plymouth, though of late years distinguished by a separate name. The united population in 1841 was 75,599. Plymouth having gradually risen from the condition of a small fishing-town to its present size, most of the streets are irregular, and by no means elegant or commodious; but the new parts of the town are handsome, and are spreading rapidly.

Plymouth carries on a considerable trade in timber with North America and the Baltic, and an intercourse has been established with the West Indies. The coasting-trade is chiefly with London, Newcastle, Newport (in Wales), and Bristol. The chief imports are coal, culm, corn, wine, and timber. It is as a naval and military station that the town is chiefly distinguished. Situated upon a capacious and secure natural harbour, near the mouth of the English Channel, it is well adapted for this purpose, fleets having a ready exit from it upon any expedition towards the Mediterranean, the Indies, or America. The dock, which is situated at Devonport (formerly on that account called Plymouth Dock), extends along the bank of the Tamar, in a curve 3500 feet in length, with a width at the middle, where it is greatest, of 1600 feet, and at each extremity 1000, thus including an area of 96 acres. Of the fortifications connected with Plymouth, the most remarkable is the citadel, which was erected in the reign of Charles II. It is placed in a most commanding situation on the east end of the height called the *Hoe*, which shelters the town from the sea. It is exceedingly well fortified, and is constantly garrisoned. It contains the residence of the governor of Plymouth, and barracks for 500 or 600 troops. The Victualling Office, an important establishment, containing storehouses, granaries, baking-houses, and cellars for supplying the meat, bread, and liquors required to provision the vessels of the Royal Navy, occupies a splendid building in the adjacent township of East Stonehouse. The port of Plymouth is distinguished for its capacity, and the security which it affords in its several parts. It is capable of containing 2000 sail, and is one of the finest harbours in the world. It consists of three divisions or harbours—Sutton Pool, immediately adjoining the town; Catwater, an extensive sheet, formed by the estuary of the Plym; and the harbour or bay of Hamoaze. At the mouth of these harbours, the great bay of Plymouth Sound forms an excellent roadstead, which is now completely secure by the erection of the breakwater across its entrance. [For an account of this immense structure, see *Breakwaters*, p. 432, Vol. I.] The Eddystone Lighthouse is also an important appendage to the harbour, the entrance of which would, without this beacon, be extremely dangerous.

The public buildings of Plymouth are—the Custom-house, the Exchange, the Athenæum, the Public Library, the Theatre, the Classical and Mathematical School, the Mechanics' Institute, &c. Of the two parish churches, the most ancient is that of St Andrew, built previously to 1291, a handsome building of the Gothic order; Charles's Church is also a Gothic structure. Among the charitable institutions, which are about 30, are a workhouse, a public dispensary, an eye-infirmary, a lying-in charity, a public subscription school, almshouses, Bible societies, &c.

Towns of Residence and Recreation.

Bath.—This is reckoned the best-built town in England, and is a favourite residence of the higher classes, either for recreation or in pursuit of health. It is situated in Somersetshire, at the distance of about 106 miles west from London, and lies in a valley divided by the River Avon. Though of great antiquity, the place came into notice and rose to importance in comparatively modern times, in consequence of possessing certain hot mineral springs, considered to be efficacious in the cure of different complaints. The water issues from the ground at a temperature of from 109° to 117° of Fahrenheit, and the quantity discharged daily from the various outlets is 184,320 gallons. The water has been analysed, and is found to contain sulphate of lime, with considerably lesser proportions of muriate of soda, sulphate of soda, carbonic acid, and carbonate of lime, also a minute portion of silica and oxide of iron. It is stimulating in its properties, and is said to be most successful in cases of palsy, rheumatism, gout, and cutaneous diseases. Over the springs there are elegant pump-rooms and baths. The modern parts of the town are built as streets, crescents, and squares, the houses being of polished sandstone, and in some instances constructed with much taste. Living is expensive in the town during the fashionable season. The population in 1831 was 38,063; in 1841, 52,346.

Cheltenham competes with Bath as a fashionable resort for valetudinarians, real or imaginary. It is situated in Gloucestershire, 88 miles west from London, and 39½ north-east of Bath. The situation is exceedingly delightful, being remarkably well sheltered by the range of Cotswold Hills on the north-east, and having an exposure to the south and west; it is on this account preferred to all other towns in England by persons from India and other hot climates. Besides being attractive from the salubrity and mildness of its climate, Cheltenham, like Bath, possesses mineral springs reckoned of value for medical purposes, but particularly for invalids with diseased livers. There are several springs, some of which are chalybeate, but their properties and strength are liable to variation. Cheltenham is laid out, in a very ornamental manner, with walks and pleasure-grounds, and may be described as perhaps the prettiest town of a small size in England. As in Bath, the expense of living is very great. The population of the parish in 1831 was 22,942, about one-half of whom belonged to the town; in 1841, it was 31,207.

Brighton, on the coast of Sussex, has risen into importance within the last sixty years, partly in consequence of a beach remarkably well adapted for sea-bathing, and partly from its attracting the regard of George Prince of Wales, who reared a marine palace here in a Chinese style. The population in 1831 was 40,634; in 1841, 48,567. Brighton is an elegant and airy town, with much to render it agreeable as a place of residence for persons in affluent circumstances. The Steyne, a spacious and beautiful lawn, nearly surrounded by houses, the Marine Parade, and several terraces overlooking the sea, furnish delightful walks; while the Baths, Theatre, Assembly Rooms, &c. form additional attractions. There is a regular intercourse with Dieppe by steam-vessels. The Chain-Pier is a remarkable object: it was erected in 1823 at an expense of £30,000, is 1134 feet long, 13 feet in breadth, and is supported on four clusters of piles.

Amongst other towns of this class, we can only notice *Herne Bay*, *Margate*, and *Ramsgate*, situated on the coast of Kent, and which may be considered as the chief places of summer recreation for the inhabitants of

London, to and from which steamers ply daily. Herne Bay is a place of recent date, rising into notice, and possessing a pleasant open beach, with space for promenading. Margate is a town of a much earlier date, situated in an open part of a bold line of chalky cliffs, and consists of a confused cluster of streets, with some lines of building of a more airy description in the environs. The town is well supplied with shops, bazaars, and places of amusement during the bathing-season; it also possesses numerous respectable boarding-houses, where, on moderate terms, a person may reside for a short time in a very agreeable manner. At these houses, parties of pleasure are made up for the day, the expense of cars and refreshments during the excursion being defrayed by general contribution. Within a mile or two along the coast is another summer retreat called *Broadstairs;* and beyond it, at an equal distance, is Ramsgate. The chalk cliffs here, which are bold and precipitous, afford a high and salubrious position for the chief part of the town, and beneath there is a fine tract of sandy beach for the use of bathers. The harbour at Ramsgate is one of the best in England, and affords shelter to all kinds of vessels in the Downs.

Cathedral Towns.

Of this class of towns, besides those which have been already noticed under other heads, we can here only advert to three of more than usual importance:—

Canterbury, the capital of Kent, is a city of great antiquity, having formed the seat of an ecclesiastical establishment to St Augustine, the apostle of Christianity to Britain in the sixth century. In the tenth and eleventh centuries, the town derived great importance from the erection or extension of a cathedral, on a most extensive scale, and of the purest Gothic architecture. In 1162, the archiepiscopal see was bestowed on the famous Becket, who enjoyed it eight years, till the period of his murder in 1170, when his shrine became an object of extraordinary reverence, and brought pilgrims in thousands from all parts of the kingdom. The cathedral, which thus became celebrated, still exists, in a slightly-altered and improved condition. Its form is that of a cross, with a central tower of unrivalled workmanship, reaching to a height of 236 feet. The size of the building is immense: the length inside, from east to west, being 514 feet; height of the vaulted roof, 80 feet; breadth of the nave and side aisles, 71 feet; and breadth of the cross aisles, from north to south, 124 feet. The interior exhibits a number of interesting monuments of distinguished individuals. Altogether, the cathedral is a work of exceeding grandeur, and, with exquisite beauty of form, possesses a profound historical interest. The town of Canterbury is old, and, like most cathedral towns, is a dull and formal place of residence, with a proportion of genteel inhabitants. It is, however, neat and clean, and is surrounded by a fertile and pleasant tract of country. It has a number of large hotels and posting-houses, to accommodate the numerous travellers passing between the metropolis and Dover, the chief out-port for France. The distance from London is fifty-six miles, and from Dover sixteen. The only object of attraction in the town besides the cathedral, is a pleasure-ground called the Danejohn, a corruption of the word donjon, such a building having once occupied the spot in connection with the city walls. The area of the field is laid out with an avenue of trees, and is principally otherwise a grassy esplanade, open freely to all the inhabitants. In 1790, the field was presented by Mr Alderman James Simmonds for the use and recreation of the inhabitants in all time coming—an act of generosity deserving the highest commendation. The population of Canterbury in 1831 was 14,463; in 1841, 15,422.

York is considered as the second city in the kingdom in point of dignity—the chief town of the county, and the cathedral city of the archiepiscopal diocese bearing its name—is situated at the confluence of the rivers Foss and Ouse, in one of the richest and most extensive plains in England. Its population in 1831 was 25,559; in 1841, 30,152. York, whatever its first rise might be, was a city of the Romans, and occupied by Roman citizens as a *colony*. It was successively the seat of Adrian, Severus, and other emperors: Severus died here in the year 210. At the time of the Norman Conquest, it was a city of considerable consequence and size. This eminence it retained for several centuries, but latterly it has sunk into a mere county and cathedral town; that is to say, a place where a considerable number of legal and ecclesiastical functionaries reside, and from which articles of necessity and luxury are diffused over a neighbouring rural district.

It is entered by four principal gates or bars, has six bridges, a cathedral, twenty-three churches, besides places of worship for various dissenting bodies; a guild-hall, county-hall, and other public buildings. The most remarkable object by many degrees is the Cathedral, or Minster, a most superb specimen of the Gothic architecture, measuring in length 524¼ feet; in breadth across the transepts, 222 feet; the nave being in height 99, and the grand tower 213 feet. The various parts were built at different times between 1227 and 1377. The parts most admired are the east window, and the screen dividing the choir from the body of the church. This window consists of upwards of 200 compartments of stained glass, containing representations of the Supreme Being, saints, and events recorded in Scripture. The screen is a piece of carved wood-work in a highly-ornamental style. The chapter-house is also much admired: it is a magnificent structure, of an octagonal form, 63 feet in diameter, and 68 feet in height. York Minster has within the last ten years twice suffered severely from fire. The damage produced on the first occasion —namely, the destruction of the wooden work in the choir—was completely and successfully repaired; that which took place on the second occasion, and which consisted of the destruction of the interior of one of the smaller towers and the roof of the nave, has also been repaired. York was at one time a commercial town of some importance, conducting trade by means of the river Ouse, which is navigable for vessels of 120 tons burthen. It still possesses a few small manufactures.

Winchester, a town of great antiquity in Hampshire, at the distance of 62 miles from London, is situated in the bottom of a rich grassy vale, through which flows the Itchin, a small river which issues into the sea at Southampton. There was a town here before the Christian era, and it afterwards became the principal city of the Danish, Saxon, and Norman dynasties. It was the scene of Alfred and Canute's glories; and here, with innumerable princes, bishops, and abbots, they lie interred. Till the revolution, it continued a chief place of residence of the royal family; a palace built by the Stuarts is now used as a barrack for soldiers. In the reign of Edward III. (1366), Winchester became the episcopal see of the celebrated William of Wykeham, who greatly improved the cathedral, and instituted a college for the education of youth. The cathedral has undergone various mutations; but being lately repaired and cleaned, is now one of the finest structures of the kind in Britain. The splendid mausoleum of William of Wykeham, in one of its aisles, is an object of great interest. At a short distance from the cathedral are placed the venerable buildings composing the College of Wykeham, at which a number of young gentlemen are educated and prepared for the university. Another highly-interesting object of antiquity is the Hospital of St Cross, situated about a mile down the Itchin. Founded by Henry de Blois, bishop of Winchester, and brother of King Stephen, in 1136, St Cross is the most perfect specimen remaining in England of the conventual establishments of the middle ages, and affords a residence and means of subsistence to thirteen indigent old men. Winchester is composed of a variety of old streets, and seems among the least improved towns in England. Latterly it has been inspired with a little animation, by becoming a station on the line of the London and Southampton Railway. Population in 1831, 9212; in 1841, 9370.

SCOTLAND.

SCOTLAND, one of the component parts of Great Britain, occupies the northern, the smaller, and less fertile portion of that island. It lies between lat. 54° 38′ and 58° 40′ north, and between long. 1° 46′ and 6° 4′ west, or, including the Hebrides, 7° 44′ west. It is thus washed on the west and north by the Atlantic, and on the east by the German Ocean; and on the south is bounded by England, the Solway Firth, and part of the Irish Sea. Its coast-line presents the most fantastic irregularities: here jutting into the ocean in high narrow peninsulas, there receding far inland, in lake-like gulfs, and again suddenly starting seaward, and breaking into a number of bold rocky headlands. Its greatest length, from the Mull of Galloway on the south to Dunnet Head on the north, is about 280 miles; its breadth is variable, being about 146 miles between Buchan Ness in Aberdeenshire and the extreme point of Ross-shire on the west, but diminishing to little more than 30 miles between the Firths of Forth and Clyde. The entire surface is estimated at 30,094 square miles, of which 26,014 are mainland, and 4080 insular.

SUPERFICIAL FEATURES.

Superficially, the country may be described as mountainous and rugged—its central and southern districts, however, exhibit less of this character; hence the common distinction of *Highlands* and *Lowlands*. A line drawn from Aberdeen to Glasgow may be regarded as the boundary between the two regions—the former a country full of romantic scenery, savage precipitous mountains, lakes, dreary moorlands, rushing streams, deep glens, and wild hanging woods; the latter being less elevated and irregular, but still presenting several considerable mountain-ranges. A more correct division, perhaps, would be into northern, central, and southern regions: the first comprising the Highlands proper; the second that triangular space enclosed by the line drawn from Aberdeen to Glasgow, and another line formed by the courses of the Clyde and Tweed; and the third region all the counties to the south-west of these rivers.

The principal *mountain-ranges* and groups are:—1. Those north of the Caledonian Canal, an irregular and rugged conformation, of which the highest points are Ben More, Ben Wyvis, and Ben Attow—the last 4000 feet. 2. The Grampians, a well-defined, but branching range running across the country—the highest peaks of which are Ben Cruachan, Ben Nevis, Ben Avon, Cairngorum, Cairntoul, and Ben Macdhui—the last 4390 feet. 3. The Central or Lowland Group, the component chains of which are the Ochil, Sidlaw, Campsie, Lomond, Pentland, and Lammermuir Hills—the highest point being Ben Clach in Clackmannan, 2359 feet. 4. The Cheviots, with their continuation the Lowthers, &c. that form the great water-shed of Southern Scotland, none of which exceed 2700 feet. All these chains or groups cross the country, and preserve a wonderful degree of parallelism: indeed, taking the Forth as the central depression of a vast trough, the edges of which are formed respectively by the Grampians and Cheviots, all the other hill-ranges, both geologically and in point of altitude, may be looked upon as so many descending steps to the centre.

There are no great *plains* in Scotland, a feature not to be expected from the limited extent and peculiar configuration of the country. There are, however, a number of considerable valleys, known as carses, straths, haughs, and dales, intermediate between the mountain-ranges; and these form, as it were, the granaries of the country. The principal of these are, Strathmore—that is, 'Great Valley'—lying between the Grampians and Ochils, and extending through part of Perth, Forfar, and Kincardine; the Carse of Gowrie on the north of the Tay; Strathearn, lying along the course of the Earn to where it joins the Tay; the Carse of Stirling and Falkirk, in the valley of the Forth; the Howe of Fife, lying along the Eden; Clydesdale; and the Merse of Berwick. The cultivated grounds, which form scarcely a third of the whole surface, chiefly lie in tracts sloping to the sea-coast, and in the lower parts of these vales. The less precipitous hilly districts are chiefly occupied as pastoral ground for sheep and cattle. Wood, which once covered a large portion of the surface, is now chiefly confined to the neighbourhood of gentlemen's seats, and to plantations which have been raised within the last sixty years for the protection of arable lands from the cold easterly and north-easterly winds.

GEOLOGICAL STRUCTURE.

The rock formations of the country commence with the earliest primaries, and if we except a few insignificant and dubious patches, terminate with the coal-measures, or the immediately overlying new red sandstone. The Highlands constitute one of the best examples of a primary country, whose strata are contorted and disrupted into a thousand irregularities by effusions of granite, greenstone, and other early igneous rocks; and with the exception of a small secondary basin in the plain of the Tweed and along the Solway Firth, the same remark is applicable to all the southern mountainous part of the country. The secondary formations—old red sandstone, carboniferous limestone, and coal-measures, with their associated traps and basalts—occupy the central portions of the country, forming a broad band, which is bounded on the north by a line drawn from Stonehaven to the mouth of the Clyde, and on the south by one drawn from Dunbar to Girvan in Ayrshire. In this band or trough, which slopes from both sides to the Forth and Clyde, occur the coal, limestone, and ironstone, which, within the last thirty years, have so much contributed to the commercial advancement of Scotland.

The chief mineral produce of the country consists of excellent granite, as that of Aberdeen and Kirkcudbright; marble, as that from Assynt; slate from Ballahulish, &c.; limestone in almost every county; building

stones of first-rate quality, as those of Fife and Mid-Lothian; coal from the extensive fields of Fife, Mid-Lothian, Linlithgow, Stirling, Lanark, and Ayr; ironstone in most of these coal-fields, but principally in Lanark and Fife; lead mainly from the Lowther range; silver is extracted in small quantities from the lead; strontian is found in Argyle; antimony in Ayrshire; alum is obtained in large quantities from the coal-shales near Campsie; clay, for tiles and bricks, is found abundantly; and several of the precious stones, as garnet, rock-crystal, and agate.

HYDROGRAPHY.

The *gulfs, bays, straits*, &c. as already hinted, are extremely numerous and intricate. On the east the principal are—Dornoch Firth, a large open expanse of water; Cromarty Firth, of considerable depth, and so completely landlocked, that it would form one of the finest harbours in the world; Moray Firth, running far inland, and communicating, by means of the Caledonian Canal, with the Atlantic Ocean; the Firth of Tay, navigable for large vessels to Dundee, and to smaller craft to Perth; and the Firth of Forth, running inland for fifty miles, presenting several subordinate bays, containing a number of indifferent harbours, and navigable for ships of any burden to Alloa, and for small steamers to Stirling. On the south and west coasts there are—the large shallow estuary of the Solway; Wigton Bay; Luce Bay; the important Firth of Clyde, with its several picturesque lochs, navigable for large vessels as far as Glasgow Bridge, and communicating with the Forth by means of a canal. To the north of this the indentations and creeks vernacularly called *lochs* and *sounds* become so numerous and complicated, that their figure and extent will be best comprehended by referring to the map.

The *capes*, or, as they are locally styled, 'heads and nesses,' are equally numerous. The principal are—Cape Wrath, Dunnet Head, and Duncansby Head, on the north; Tarbet Ness, Troup Head, Kinnaird's Head, Buchan Ness, Buddon Ness, Fife Ness, and St Abb's Head, on the east; Southerness, Burrow Head, and the Mull of Galloway, on the south; Corsill Point, Mull of Cantire, Mull of Oe, Point of Rinns, Ardnamurchan, and Stoir Point, on the west; Aird Point, in Skye; Barra Head and the Butt of Lewis, respectively the southern and northern extremities of the Hebrides; and Sumburgh Head, the most southerly projection of the Shetland islands. Most of these headlands are the sites of lighthouses or beacons, and form important objects to the navigator.

The *islands* and *outlying rocks* connected with Scotland constitute one of its most characteristic features—forming, as they do, nearly a sixth part of the estimated area of the country. Their value, however, is by no means proportionate to their extent—most of them having rugged coasts and bare hilly surfaces, exposed to the injurious influences of the sea-breezes. The east coast presents no islands, with the exception of those in the Firth of Forth, the chief of which are Inchcolm, Inchkeith, and the Isle of May, the two last being surmounted by lighthouses. At the entrance of the Forth is the Bass Rock, a singular basaltic mass, rising perpendicularly from the sea to the height of 400 feet, bearing a scanty herbage, which pastures a few sheep, and being the favourite resort of the gannet or solan goose. About twelve miles east of Buddon Ness lies the Bell-Rock, or Inchcape, a dangerous ledge, about 659 yards in length and 110 in breadth, wholly covered at high water. On this a lighthouse, after the model of the Eddystone, was erected in 1810, the lantern of which is 90 feet above the highest spring-tides.

The islands on the west coast may be conveniently arranged into three great groups—those in the Firth of Clyde; the Inner Hebrides, which, like Skye, Mull, &c. lie adjacent to the mainland; and the Outer Hebrides, separated from the mainland by the wide channel of the Minch. The islands of the Clyde are Bute, about 18 miles in length by 5 in breadth, high and rugged towards the north, but of gentler aspect and milder climate on the southern part—so much so as to be regarded as the Isle of Wight of Scotland; Arran, a large oval island, about 18 miles by 12, consisting of high heath-clad hills, fully 3000 feet in height, and celebrated for their geological phenomena; the two Cumbraes; and Ailsa Craig, an isolated mass, 15 miles off the coast of Ayr, about 2 miles in circumference, and rising to a height of 1000 feet, pastured by a number of goats, and a favourite breeding-place for sea-fowl. The chief of the Inner Hebrides are Skye, Raasay, Rum, and Eig, belonging to Inverness; and Mull, Isla, Jura, Tiree, Iona, celebrated for its ecclesiastical associations, and Staffa, to Argyle. The Outer Hebrides, or Western Isles, forming a high range about 140 miles long, consist of Lewis, Harris, North Uist, Benbecula, South Uist, Barra, &c.—all decidedly rugged and barren, and in many places covered with extensive tracts of muir and moss; Skerryvore, a dangerous group of rocks, lying far seaward, and all but covered at highwater, is now the site of a lighthouse, exposed to the weight and fury of the Atlantic waves.

On the north are two distinct groups of the Orkney and Shetland islands; the former being separated from the mainland by the Pentland Firth, in which lie Stroma, the Skerries, and other rocky islets; and the latter from the former by a channel 48 miles across, in the middle of which stands Fair Isle. The Orkneys consist of about sixty-seven islands, of which forty are uninhabited, the rest tolerably fertile, and the whole occupying an area of 281,600 acres. The Shetlands are about 100 in number, of which a great proportion are untenanted—the whole exposing a wild rugged surface of 563,000 acres to an ungenial clime.

The *lakes* or *fresh-water lochs* of Scotland are numerous; and, like most sheets of water occupying irregular mountain gorges and valleys, are all less or more celebrated for picturesque scenery. In the southern portion of the country there are few of any size—Lochs Ken, Cree, Doon, and St Mary's being the principal: in the central or true Lowland district there are still fewer, Lochleven in Kinross—celebrated for its historical associations with Mary, and now for its delicious trout—being the largest; but in the northern or Highland region they are not only numerous, but extensive. Loch Lomond, forming the boundary between Dumbarton and Stirling, and discharging its waters into the Clyde by the river Leven, is by far the largest of British lakes, being about 24 miles long, and varying from 1 to 7½ in width; its depth from 100 to 300 feet. The lochs of Argyleshire—Awe, Lydoch, Shiel, &c.—are also of large dimensions, but present less beauty; the same may be remarked of those in Inverness-shire—Ness, Laggan, Ericht, Arkaig, Quoich, &c.; of those in Ross—Maree, Fannich, &c.; and of those in Sutherland—Shin, Naver, Hope, &c. The lakes of Perthshire, as a whole, are the most celebrated for their picturesque beauty, the associated hills, passes, waterfalls, and shaggy woodlands, presenting scenery, according to the estimation of some, unequalled by any other in Europe; the chief are Katrine, Voil, Earn, Tay, Rannoch, Tummel, and Garry. (See p. 229.)

The *rivers* in this part of Great Britain, owing to the rugged and mountainous character of the country, present very different features from those in the southern section. None of them has the sluggish aspect of the English rivers, nor does their course lie through broad level valleys; but descending from high mountains, and cutting for themselves deep channels, they are often interrupted by rapids and waterfalls, and in consequence, with two or three exceptions, they are of no use to navigation. Beginning with those on the east, the principal are—the Findhorn and Spey, descending from the north slope of the Grampians, both extremely rapid in their flow, and subject to sudden and destructive floods; the Don and Dee, also Grampian rivers of some extent, but unnavigable; the Tay, the largest of Scottish rivers, fed by a number of mountain tributaries, navigable, as has been stated, to Perth; the

Forth, with its affluents Teith, Devon, &c. navigable to Stirling for vessels of seventy tons; and the Tweed, with its numerous tributaries or 'waters,' rendered famous in Border song, also unnavigable. On the west, the only river of note is the Clyde, having also a number of affluents. The most celebrated *waterfalls* connected with these rivers are those of Clyde, the Gray-mare's-tail on the Moffat-water, the Caldron Linn on the Devon, and the Falls of Foyers in Inverness-shire; for descriptions of which see the section devoted to Remarkable Natural Scenery.

Of limpid and copious *springs* no country can possess a more liberal supply; but few of them are of mineral or medicinal celebrity—Pitcaithly in Strathearn, Dumblane, Airthrey, St Bernard's near Edinburgh, Innerleithen, and Moffat, being those that are in anyway frequented by invalids.

CLIMATE.

The climate of Scotland is more severe than that of England; 'but'—we quote M'Culloch—'owing to the proximity of most parts of the country to the sea, and the numerous firths and deep bays by which it is penetrated, it is less severe than might, from the latitude, be expected. The mean annual temperature of places near the level of the ocean, throughout the country, averages about 46½° Fahrenheit. At Edinburgh, which is from 300 to 400 feet above the sea-level, the mean temperature of the year is 47° 8′, which may be taken as that of the inland parts generally in the south of Scotland, the mean of the coldest month being 38° 3′, and of the warmest 59° 4′. A great deal of rain falls in Scotland, but very unequally; for on the east coast it ranges from 22 to 28 inches, whereas on the west coast and the Hebrides, it ranges from 30 to 44 inches. The average fall of rain in Edinburgh is 23½ inches, and in Glasgow about 29·65 inches. Excess of humidity, and the occurrence of heavy rains in August, September, and October, and of cold piercing east winds, especially along the east coast in the months of April, May, and the first half of June, are the great drawbacks in the climate of Scotland.' Compared with that of England, it is cold, cloudy, and wet; yet the temperature is not liable to such great extremes as that of either England or France, seldom falling below 25° Fahrenheit, or rising above 65°, the annual average being from 45° to 47°. The summer is uncertain, and often comprehends many consecutive weeks of ungenial weather; but, on the other hand, the winters—considering the latitude—are rarely severe, and often include many agreeable days, and even weeks.

BOTANY AND ZOOLOGY.

The plants and animals of the country are, generally speaking, specifically the same as those of England, but exhibit somewhat more of a boreal character, as might be expected from the higher latitude and altitude of the land. Thus many of the ornamental shrubs and exotic trees which adorn the lawns of England will not flourish unless in very favoured localities; the usual forest-trees attain to perfection in the Lowlands, but many of them are unable to resist the rigorous climate of the Highlands, where the native Scotch pine and birch grow at a very high elevation. But even there a limit is found to all timber-trees; and large tracts of the mainland, and almost all the islands, are utterly treeless. The common cultivated grains are grown profitably, and to great extent, in the Lowlands; but oats, and a coarse variety of barley (bigg), are the only cereals grown in the Highlands and islands.

The native animals present similar differences. The stag, roe, and wild cat are thoroughly *feræ naturæ* on the northern hills; game-birds, as the partridge, grouse, ptarmigan, woodcock, blackcock, capercailzie—are peculiarly abundant in the same localities; Scotland possesses fewer species of fresh-water fish, but has the salmon, trout, pike, and perch in greater abundance than in England; many of the marine animals, cetacea, herring, cod, and other white fish, are more plentiful; while others, as the pilchard, mackerel, and white bait, are scarcely known. The domesticated animals are now for the most part crossed with the larger and finer varieties of the south; but Scotland still retains several breeds peculiarly suitable to its soil and climate—as the Clydesdale, Galloway, and Shetland breeds of the horse; the Ayr, Fife, Angus, and West Highland breeds of the ox; the Cheviot sheep of the south, and the black-faced hardy wether of the north.

PEOPLE—POPULATION.

The population of Scotland is readily divisible into two great sections—the Lowlanders or Scotch proper, and the Highlanders or Celts. The former, like the English, are of the Teutonic race, but consist of an admixture of Picts, Saxons, Danes, and Scandinavians. They occupy the whole of the Lowlands and the eastern coast-fringe of the Highlands, speaking a variety or dialect of the English language. They are described generally as a tall, large-boned, and muscular race, with features less round and soft than the modern English, and with a larger and more elongated cranium. The Highlanders, on the other hand, are of Celtic origin; and though their language is gradually giving way to that of the Lowlanders, in other respects they retain all the peculiarities of that race.

The Scottish character exhibits a considerable share of both energy and perseverance. It may safely be said that a country with so many physical disadvantages could never have been brought into such a condition as respects rural husbandry, nor, with all the advantage of the English connection, been made so prosperous a seat of both manufactures and commerce, if the people had not been gifted in a high degree with those qualities. A disposition to a frugal and careful use of means is also abundantly conspicuous in the Scotch. The poorest poor, at least in rural districts, are in few instances of such improvident habits as to exhibit that destitution of furniture, clothing, and tolerable house accommodation, which meets the eye almost everywhere in Ireland. Caution, foresight, and reflection, may be said to enter largely into the Scottish character. Under the influence of these qualities, they are slow, and sometimes cold in speech, and are therefore apt to appear as deficient in frankness and generosity. These, however, are in a great measure only appearances. That *perfervidum ingenium*, or fiery genius attributed to them by Buchanan, is still a deep-seated characteristic of the people. On subjects which they regard as important, they sometimes manifest this excitability in a very striking manner; as, for instance, in their almost universal rising against Charles I. in defence of their favourite modes of worship and ecclesiastical polity. Generous affections, in which, as compared with the English, the Scotch might appear deficient, perhaps only take in their case somewhat different directions. They cherish more than most people a feeling of attachment for their native country, and even the particular district and spot of their birth; for their remote as well as immediate kindred, and for everything which reminds them of what is honourable in the doings of those who went before them. A strong sense of religion is a conspicuous feature in the Scottish national character; clear, however, from all regard to external, and what appear to them unimportant things connected with it. There is no country where a more decent attention is paid to the Sabbath than in Scotland. It may at the same time be remarked, that their religion is more doctrinal than directly venerative or sentimental—a peculiarity which may be traced in the plainness of their forms of worship, as either its cause or its effect. There is a considerable tendency in the Scottish intellect to argumentative reasoning, and this shows itself in the service in their churches as well as in their philosophical literature. The domestic virtues flourish in much the same degree in Scotland as in England; but the humbler classes in North Britain are not quite so remarkable for cleanliness as the lower English. The

rural labouring-classes are distinguished for their steady industry and decent conduct; and it is only perhaps amongst the lower orders in large towns that much moral deterioration has taken place. For centuries the adventurous disposition of the Scotch has been remarkable. An immense number of young persons every year leave their native country to push their fortune in the busier English cities, in public employment in India, in the colonies, or in other parts of the world. These persons have generally a tolerable education in proportion to their rank and prospects; and being found possessed of steadiness, fidelity, and perseverance, they rarely fail to improve their circumstances. We are here reminded of the advantage which Scotland has long enjoyed in the possession of a universally-diffused means of elementary instruction. This, though in some respects over-estimated, has at least insured that nearly every person reared in Scotland is not without some tincture of literature. (See No. 62, p. 180, for details respecting the religious and educational establishments of Scotland.)

NATIONAL INDUSTRY.

The productive industry of the country has increased prodigiously within the current century. *Agriculturally*, the value of the land has been more than doubled within the last seventy years, and this in spite of those obstacles which render so much of the surface unapproachable by the plough. The system of farming, under leases of nineteen years, is at once exact and scientific, aided by the best-constructed machines, and by chemical skill in soils, drainage, and the application of artificial manures. Taking into account crops, pastures, gardens, and woodlands, the total value of the land produce has been estimated at £29,327,000, independent of the unascertained value of cattle, sheep, wool, and dairy produce. Generally speaking, the *fisheries* of Scotland are profitably conducted, the salmon of the rivers and estuaries yielding from £120,000 to £160,000 annually; the herring-fishery producing from 600,000 to 660,000 barrels; the cod and white-fish fisheries very large, but unknown amounts; oyster and lobster-dredging also of considerable value; besides minor fishings, and the accidental strandings of large shoals of the smaller cetacea.

The *manufacturing* progress of Scotland has been extremely rapid and gratifying. The cotton manufacture, valued at £5,000,000 annually, chiefly centres in Glasgow and Paisley; the woollen at Hawick, Galashiels, Kilmarnock, and Aberdeen; linen in the towns of Forfar and Fife; papermaking in Mid-Lothian and Fife; gloves, hosiery, hats, and minor soft wares, in several localities. In iron-founding, Scotland has now a large and prosperous trade, principally in the counties of Lanark and Stirling; steam-engines and machinery of every description are extensively constructed; and some of the iron ship-yards on the Clyde are unrivalled. Typefounding, printing, and publishing, are largely carried on in Edinburgh. Leather, chemicals for the bleacher, dyer, &c., glass-wares, soap, and the like, are the other principal manufactured products. *Distilling* and *brewing* constitute a considerable portion of the trade of the country—the whisky and ales so produced having long had an extensive celebrity.

The *commerce* has more than kept pace with the manufactures; the mercantile navy of Scotland, exclusive of passenger steamers and the like, numbering 3600 vessels, with an aggregate burthen of 440,000 tons. In 1843 there were 128 steamers, with a burthen of 19,422 tons. The *internal communication* of the country is carried on by first-rate macadamised roads; by canals, of which there are 150 miles; and by railways, of which about 600 miles are constructed, or in course of construction. (See No. 62, p. 186.)

GOVERNMENT—ADMINISTRATION.

The *government* of the country, since the Union in 1707, has been identical in its leading features with that of England. (See No. 62, p. 177.) The law-courts, however, both civil and criminal, are much more simple and efficient than those of the sister kingdoms. For administrative purposes, Scotland is divided into 33 shires or sheriffdoms, comprising 1023 parishes. In the following table, the counties are arranged alphabetically, with their areas in statute acres, population according to census 1841, and county towns:—

Counties.	Acres.	Population.	County Towns.
Aberdeen,	1,254,400	192,283	Aberdeen.
Argyle,	2,002,560	97,140	Inverary.
Ayr,	664,960	164,522	Ayr.
Banff,	412,800	50,076	Banff.
Berwick,	282,880	34,427	Greenlaw.
Bute,	103,040	15,695	Rothsay.
Caithness,	439,680	36,197	Wick.
Clackmannan,	30,720	19,116	Alloa.
Cromarty,	163,840	11,362	Cromarty.
Dumbarton,	145,920	44,295	Dumbarton.
Dumfries,	801,920	72,825	Dumfries.
Edinburgh,	226,560	225,622	Edinburgh.
Elgin,	302,720	34,994	Elgin.
Fife,	298,880	140,310	Cupar.
Forfar,	568,320	170,400	Forfar.
Haddington,	174,080	35,731	Haddington.
Inverness,	2,594,560	97,615	Inverness.
Kincardine,	243,200	33,052	Stonehaven.
Kinross,	46,080	8,763	Kinross.
Kirkcudbright,	525,760	41,099	Kirkcudbright.
Lanark,	604,880	427,113	Lanark.
Linlithgow,	76,800	26,848	Linlithgow.
Nairn,	124,800	9,218	Nairn.
Orkney & Shetland,	819,200	60,796	Kirkwall.
Peebles,	204,160	10,520	Peebles.
Perth,	1,656,320	138,151	Perth.
Renfrew,	144,000	154,755	Paisley.
Ross,	1,682,560	67,618	Tain.
Roxburgh,	457,600	46,003	Jedburgh.
Selkirk,	168,320	7,899	Selkirk.
Stirling,	312,960	82,179	Stirling.
Sutherland,	1,122,560	24,666	Dornoch.
Wigton,	288,960	39,179	Wigton.
Total,	18,944,000	2,620,610	

Note.—The word Scotland is of dubious and disputed origin: all that is known for certain being, that the term *Scoti* was applied to the Pictish inhabitants of the western corner of the country so early as the second century. The topographical nomenclature is chiefly Celtic and Saxon; hence the frequent occurrence of the following prefixes and terminations:—*Ben*, mountain; *brae*, highland; *fell*, mountain; *law*, mount; *dun*, hill; *cairn*, heap of stones, or stony hill; *craig*, rocky height; *ard* or *aird*, headland or height; *ness*, promontory; *strath*, large valley; *glen*, steep narrow valley; *blair*, open field or plain; *aber*, *inver*, *auchter*, at the mouth or confluence of a river; *kil*, cell or church; *bal*, dwelling or town; *ken*, *kin*, head or height; *inch*, island; *more*, large; and so on.

REMARKABLE SCENERY—NATURAL CURIOSITIES.

The comparatively irregular surface of Scotland, or, as a geologist would remark, its being more generally formed of the primitive and early rocks, has caused the existence of much picturesque and romantic scenery, the attractions of which have been greatly heightened of late years by the works of the native poets and novelists, particularly Sir Walter Scott. The Highlands may be said to form one wide tract of such scenery, though some parts are considerably more beautiful than others. The finer scenery in Scotland generally lies along the beds of lakes or the vales of rivers. The chief tracts are the following:—

Lower Perthshire.

The *Trossachs* and *Loch Katrine*.—This is a beautiful district, situated at the distance of little more than 25 miles from Stirling, and remarkable as the scenery of Scott's 'Lady of the Lake.' It may be said to commence at the large Lowland village of Callander, which is only 16 miles from Stirling. This village lies in the bosom of the valley of the Teith, with lofty hills on all sides except the east, and apparently occupying the last patch of level ground before the traveller enters the Highlands. The surrounding scenery is wor-

thy of being explored; two places, in particular, should be visited. The first is the *Fall of Bracklin*, situated among the hills, at the distance of a mile and a-half in a north-easterly direction from the village. It consists of a series of cascades formed by the impetuous running of a mountain stream, termed the Keltie, down a rugged rocky ravine. Each cascade is from 8 to 10 feet in depth, and altogether the Falls may measure upwards of 100 feet, before they finally settle in a profound receptacle at the bottom. Above the chasm there is thrown a rustic foot-bridge, from which the view of the Falls, when the water is large, is particularly grand.

The other place to which we would draw attention is the *Pass of Leny*. This is a narrow opening, about a mile to the north-west of the village, which affords access, as its name imports, from the Low country into the wild recesses of the Highlands. While the vale of the Teith continues towards the west, the road to the Pass of Leny strikes off in a north-westerly direction. Skirted with waving woods, and bound in by lofty mountains, this is a scene of great sublimity. A rapid river, which issues from the mountain lake denominated Loch Lubnaig, hurries through the narrow vale over a series of little cascades, yielding a music harsh and wild, in strict keeping with the ruggedness of the scene. The road leads along the brink of Loch Lubnaig, to the small parish village of Balquidder, in the churchyard of which the grave of the celebrated freebooter Rob Roy is still pointed out.

The road towards the Trosachs pursues a tortuous line along the base of a mountain-range, skirting the north side of the valley. In the bottom of the vale lie in succession two long stripes of water, or lakes, called Loch Vennachar and Loch Achray. Immediately before approaching the eastern extremity of the last of these lakes, which is by much the smallest, a road leads off to the right into the vale of *Glenfinlas*—a tract of ten miles in extent, formerly a royal hunting-forest, destitute of the smallest symptom of habitation or of cultivation, and which any one who wishes to have a complete idea of an Ossianic desert, in all its sterile and lonely wildness, may be recommended to traverse. The bridge crossing the stream which descends from this vale, is called the Bridge of Turk, from the circumstance, it is said, of a wild boar, which had done much mischief in the neighbourhood, having been slain at the place in times long bygone.

On coming to the head of Loch Achray, you approach the Trosachs. At this point is situated an inn having a strange Gaelic name, sounding something like Ardkencrockran. This is the last human habitation on the route, and here travellers usually quit their vehicles in order to walk the remainder of the distance; the road, however, will accommodate a chaise to the verge of Loch Katrine. The Trosachs is simply a concluding portion of the vale, about a mile in extent, and adjoining to the bottom of Loch Katrine. From the tumultuous confusion of little rocky eminences, of all the most fantastic and extraordinary forms, which lie throughout the bottom of the vale, and are everywhere shagged with trees and shrubs, nature here wears an aspect of roughness and wildness, of tangled and inextricable boskiness, totally unexampled. The valley being contracted, hills, moreover, rise on each side to a great height, which, being entirely covered by birches, hazels, oaks, hawthorns, and mountain ashes, contribute greatly to the general effect. The meaning of the word *Trosachs* in some measure describes the scene—a rough or *bristled* piece of territory. The author of the 'Lady of the Lake' has described it as 'a wildering scene of mountains, rocks, and woods, thrown together in disorderly groups.'

At the termination of the Trosachs, Loch Katrine commences: it measures about 10 miles in length, and is justly reckoned one of the most beautiful in Scotland. Its principal charm consists in the singular rugged wildness of its mountainous sides, and its pretty rocky islets, rising to a considerable height out of the water, and tufted over with trees and shrubs. Near the eastern extremity of the lake there is precisely such an island as that which is described in the poem as the residence of the outlawed Douglas and his family. To fulfil the wishes of the imagination—if such a phrase may be used—Lady Willoughby D'Eresby, the proprietrix of the ground, has erected upon the island a sort of tower or cottage, such as that which the said family occupied; and he must be a traveller of more than ordinary churlishness who could refrain from indulging in the pleasing deception thus created.

The view of the lake, on approaching it on the east, is rather confined; but from the top of the rocky and woody mount above, the prospect is more extensive, and of that singular beauty which Scott in his 'Lady of the Lake' has described:—

> ——'Gleaming with the setting sun,
> One burnished shoet of living gold,
> Loch Katrine lay beneath him rolled,
> In all her length far-winding lay,
> With promontory, creek, and bay,
> And islands that, empurpled bright,
> Floated 'mid the livelier light,
> And mountains that like giants stand,
> To sentinel enchanted land.
> High on the south, huge Ben-venue
> Down on the lake its masses threw—
> Crags, knolls, and mounds, confusedly hurled,
> The fragments of an earlier world;
> A wildering forest feathered o'er
> His ruined sides and summit hoar;
> While on the north, through middle air,
> Ben-an heaved high his forehead bare.'

Loch Earn.—The beautiful scenery connected with this lake may be said to commence at Comrie, a village about 20 miles to the west of Perth, and remarkable as the place of all others in the United Kingdom where earthquakes take place most frequently. The vale of the Earn is here, and even lower down, full of natural and acquired beauty. Passing upwards towards the lake, the scenery becomes more interesting at every step. At that part of the vale which adjoins to the bottom of the lake, its character is similar to that of the Trosachs, at the corresponding extremity of Loch Katrine, though less minutely rugged and picturesque. Passing through the extensive grove at the bottom of the valley, now within sight and hearing of the ever-glancing and ever-murmuring Earn, and then beyond both, as the road approaches and recedes from the water-side, the traveller gets frequent broken glimpses of the grand and wildly-serrated tops of the neighbouring mountains, whose sides present a strange piebald mixture, by no means deficient in effect, of alternate bare crag and incumbent verdure—a beautiful confusion, indeed, of gray and green—relieved occasionally by the darker branches of the birch and weeping-ash.

Loch Earn extends 9 miles in length, and generally about 1 mile in breadth. It is thus described by Dr Macculloch:—'Limited as are the dimensions of Loch Earn, it is exceeded in beauty by few of our lakes, as far as it is possible for many beauties to exist in so small a space. I will not say that it presents a great number of distinct landscapes adapted for the pencil; but such as it does possess are remarkable for their consistency of character, and for a combination of sweetness and simplicity, with a grandeur of manner, scarcely to be expected within such narrow bounds. Its style is that of a lake of far greater dimensions; the hills which bound it being lofty, and bold, and rugged, with a variety of character not found in many of even far greater magnitude and extent. It is a miniature and model of scenery that might well occupy ten times the space. Yet the eye does not feel this. There is nothing trifling or small in the details; nothing to diminish its grandeur of style, and tell us we are contemplating a reduced copy. On the contrary, there is a perpetual contest between our impressions and our reasonings: we know that a few short miles comprehend the whole, and yet we feel as if it were a landscape of many miles—a lake to be ranked among those of first

order and dimensions. While its mountains thus rise in majestic simplicity to the sky, terminating in bold, and various, and rocky outlines, the surfaces of the declivities are equally bold and various; enriched with precipices and masses of protruding rock, with deep hollows and ravines, and with the courses of innumerable torrents which pour from above, and, as they descend, become skirted with trees till they lose themselves in the waters of the lake. Wild woods also ascend along their surface, in all that irregularity of distribution so peculiar to these rocky mountains; less solid and continuous than at Loch Lomond; less scattered and romantic than at Loch Katrine; but from these very causes, aiding to confer upon Loch Earn a character entirely its own.' In passing along Loch Earn, it is recommended to go by the road on the south side. The house of Ardvoirdlich (Stewart, Esq.), occurs about mid-way; its name recalls the memory of Stewart of Ardvoirdlich, a partisan of Montrose, who killed his friend Lord Kilpont in the royalist camp at Collace, September 5, 1644—the incident on which Scott founded his 'Legend of Montrose.' The woody promontories which here project into the lake are remarkably beautiful. About a mile and a-half from the west end of the lake occur the castle and Falls of Edinample, a scene of distinguished loveliness, such as people, in the spirit of compliment, say might give occasion to a volume, and which, rather strange to tell, has actually done so. The upper extremity of this beautiful lake, where the general merits of the scenery may be said in some measure to be condensed and combined, is enlivened by the little village and inn of Loch Earn Head.

Middle Perthshire.

Dunkeld.—This small town, so celebrated for the fine scenery in its neighbourhood, is situated on the north bank of the Tay, at the distance of 15 miles from Perth, and 24 from Kenmore. Nestling beneath steep and woody mountains, with a noble river running in front, across which there is an elegant bridge, the first view of Dunkeld, in approaching it from the south, is very striking. The village consists of two small streets, in which are two excellent inns, affording extensive accommodation for the tourists who flock hither in summer. At Dunkeld, attention is called to the venerable remains of a cathedral, and the Duke of Athole's mansion, styled Dunkeld House; but our present business is with the natural scenery. Most of this is in the pleasure-grounds connected with the mansion.

Craig-y-Barns, a lofty hill, wooded to the top, which rises behind the house, is a resort of tourists for the sake of the magnificent view which it commands. They are also conducted by guides to the scenery of the *Bran*, which joins the Tay on its opposite bank near the village of Inver—the birthplace and usual residence, it may be mentioned, of the late Neil Gow, so famous wherever Scottish music is known, at once for his performance on the violin and his excellent compositions. Near this place the tourist is conducted into a tasteful hermitage or summer-house, named Ossian's Hall, where he sees before him a picture representing the aged Ossian singing to some females the tales 'of the days that are past,' while his dog, his hunting-spear, and bow and arrows, lie at his side. On a sudden, this picture slips aside, and discloses to the view of the surprised stranger a splendid cataract, which dashes down the rocks immediately opposite to the building, and the waters of which are reflected from a range of mirrors disposed around the hall. To use the words of Dr Clarke, 'The whole cataract foams at once before you, roaring with the noise of thunder. It is hardly possible to conceive a spectacle more striking. If it be objected that machinery contrivance of this sort wears too much the appearance of scenic representation, I should reply, that as scenic representation I admire it, and as the finest specimen of that species of exhibition, which, doubtless, without the aid of such a deception, would have been destitute of half the effect it is now calculated to produce. A little below this edifice, a simple, but pleasing arch is thrown across the narrow chasm of the rocks, through which the river flows with vast rapidity. About a mile higher up the Bran is the *Rumbling Bridge*, thrown across a chasm of granite, about fifteen feet wide. The bed of the river, for several hundred feet above the arch, is copiously charged with massive fragments of rock, over which the river foams and roars like the waters at Ivy Bridge in Devonshire. Approaching the bridge, it precipitates itself with great fury through the chasm, casting a thick cloud of spray or vapour high above the bridge, and agitating by its fury even the prodigious masses which form the surrounding rocks. Few objects will more amply repay the traveller for his trouble of visiting them, than the woody precipices, the long, winding, shady groves, the ruins and cataracts of Dunkeld.' In the angle formed by the junction of the Bran and Tay rises *Craig Vinean*, a broad shadowy mass of firs, reared against the sky. A neighbouring eminence obtains the name of the *King's Seat*, in consequence of King William the Lion having been in the habit of stationing himself upon it, in order to shoot at the droves of deer which his attendants caused to pass through the adjacent hollows.

Aberfeldy, Kenmore, and *Killin*.—Tourists frequently proceed from Dunkeld along the bank of the Tay, in order to comprehend the tract of scenery here indicated. *Aberfeldy*, a village not in itself remarkable, is celebrated for the fine cataract, formed by a small tributary of the Tay, in its neighbourhood, and near the House of Moness. The tourist is conducted by a guide along the thickly-wooded banks of this rivulet, till, about a mile from the village, he reaches the first of the celebrated waterfalls of Moness. A little sub-tributary rill here pours, in a series of cascades, down the side of the glen, amidst a natural scene of the greatest beauty. A little farther up the main dell, the rivulet pours along a steep natural staircase, of a hundred feet in perpendicular descent, the sides of which rise abruptly and ruggedly, clothed with the most beautiful natural plants. This scene is described by Burns in one of his well-known songs:—

> 'The braes ascend like lofty wa's,
> The foaming stream deep-roaring fa's,
> O'erhung wi' fragrant spreading shaws,
> The birks of Aberfeldy.
>
> The hoary cliffs are crowned wi' flowers;
> White o'er the linn the burnie pours,
> And, rising, weets wi' misty showers
> The birks of Aberfeldy.'

At a third cataract, higher up, the pathway crosses the stream, and descends on the other side of the dell. Pennant, the tourist, describes the Moness Falls as 'an epitome of everything that can be admired in the curiosity of waterfalls.'

A ride of six miles along the Tay brings the traveller to *Kenmore*, a village of famed beauty, situated at the east end of Loch Tay, at the place where the river issues from that sheet of water. This is one of the chief stages or *points* in the tour of Perthshire, and it is provided, accordingly, with a good inn. Lofty hills ascend on each side; on one hand there is a noble lake; on the other, towards Aberfeldy, stretch the splendid grounds around Taymouth Castle, the seat of the Marquis of Breadalbane. This magnificent house—truly worthy of the great chief and land-proprietor who owns it—is about a mile to the east of Kenmore, the exterior gateway of the park opening from the street of the village. It is a dark-gray castellated edifice, of modern aspect, situated in the low ground beside the river, with a beautiful backing of woody hills rising behind it. A guide is required to introduce a stranger to all the beauties of the Taymouth Park, among which the most remarkable is the *Bereeau Walk*, a grand avenue of 450 yards in length, which reminds one of some lofty cathedral, 'casting a dim religious light.'

Loch Tay is a fine sheet of water, 15 miles in length, lying between two ranges of hills. In the centre of the north-west side rises *Ben Lawers*, to the height

of 4015 feet. An island near Kenmore formerly contained a priory of Augustines, founded by Alexander I. in the year 1122. Here his queen, Sybilla, daughter of Henry I. of England, was buried. Loch Tay is remarkable, like some other Scottish lakes, for having been on several occasions greatly agitated at the moment of the occurrence of earthquakes in distant parts of the world. It is from 15 to 100 fathoms deep. There is a road on each side to Killin, the distance being sixteen miles. Both abound alike in fine scenery, though, by pursuing that along the south side, a view will be obtained of the lofty Ben Lawers, which will scarcely be seen in such perfection on the opposite side. The mixture of wood, rock, and cultivated field which the traveller finds skirting Loch Tay, will surprise him with its happy effect. The system of minute farms prevails here in all its pristine vigour, and a vast number of rude and picturesque cottages necessarily enter into the composition of the landscape.

Killin, a straggling little village, situated in the low vale at the head of the loch, is celebrated for the varied beauty of its scenery. Here two rivers, the Dochart and the Lochy, come down out of different glens, and join their waters with each other and with the lake. The vale of the latter is peculiarly beautiful; but that of the Dochart, extending up to Tyndrum, upon the great west road, is only stern and wild. On arriving at the town, the Dochart breaks over a strange expanse of table-rock in a thousand little cascades; so that the traveller, who crosses a bridge just at the place, is bewildered, as he looks around, with the flashing and sparkling water which everywhere meets his eye. 'Killin,' says Dr Macculloch, 'is the most extraordinary collection of extraordinary scenery in Scotland, unlike everything else in the country, and perhaps on earth, and a perfect picture-gallery in itself, since you cannot move three yards without meeting a new landscape. A busy artist might here draw a month, and not exhaust it. It is indeed scarcely possible to conceive so many distinct and marked objects collected within so small a space, and all so adapted to each other as always to preserve one character, and at the same time to produce so endless a number of distinct and beautiful landscapes. To find, however, all that Killin has to give of this nature, it is necessary to pry about into corners, like a cat; as the separate scenes are produced by very slight changes of position, and are often found in very unexpected places. Fir-trees, rocks, torrents, mills, bridges, houses—these produce the great bulk of the middle landscape under endless combinations; while the distances more constantly are found in the surrounding hills, in the varied woods, in the bright expanse of the lake, and the minute ornaments of the distant valley, in the rocky and bold summit of Craig Cailleach, and in the lofty vision of Ben Lawers, which towers like a huge giant to the clouds, the monarch of the scene.'

On the north-west shore of Loch Tay, near Killin, stands the mouldering ruin of Finlarig Castle, built by Sir Colin Campbell of Glenurchy between 1513 and 1523, and the seat of the family before their removal to Balloch or Taymouth. 'We observe also,' says a traveller, writing in 1802, 'situated on a plain at the west end of the lake, a neat but small mansion (Kinnel), belonging to Mr M'Nab, the chieftain of that name. The family burial-ground, *Inish-Mhui*, close by the house, is pointed out to the stranger as a place of singular beauty. It undoubtedly is such, and is highly calculated to raise ideas of tenderness and sorrow; as an insulated grove of tall pines, whose solemn aspect and deep silence are in fine harmony with the waters around it, the blue expanse of the lake calm and unruffled, and the height of the mountains that rise from its margin, are objects well suited to correspond with the belief that Fingal sleeps here in the dust.'

Dumbartonshire.

A tract of beautiful scenery extends through this county, from the banks of the Clyde along those of the Leven, and including Loch Lomond, the largest, and probably most beautiful of our British lakes:—

At the starting-point, in an angle formed by the confluence of the Leven and Clyde, is a basaltic mass, shooting up to the height of 560 feet above an alluvial plain. This affords a site for the celebrated *Dumbarton Castle*, a romantic fortress, noted in Scottish history, and one of four kept in repair in terms of the Act of Union. Passing the town of Dumbarton, the tourist proceeds upwards along the vale of the Leven, a scene of singular beauty, filled with thriving villages and elegant mansions. The road, at the distance of two miles from the town, passes the old mansion-house of Dalquharn, in which, in the year 1721, the author of 'Roderick Random' first saw the light. Archibald Smollett, the father of the novelist, was the fourth son of Sir James Smollett of Bonhill, and having married against his father's will, was residing here, in possession of one of the farms of the family property, at the time of the birth of his illustrious child. In a field on the opposite or west side of the road, there is an obelisk to the memory of the novelist, erected and inscribed by his cousin-german, James Smollett of Bonhill. Immediately beyond, the road passes through the populous modern village of Renton, occupied by persons engaged in the neighbouring bleachfields, and taking its name from that of a lady married into the Smollett family. This, and another similar village named Alexandria, a little farther on, together with the appearance of various works on a large scale scattered over the landscape, testify that industry of a different kind from that which becomes 'embrowned with toil,' has taken possession of the limpid waters of the Leven, to which, therefore, the beautiful ode of Smollett is no longer strictly applicable. Bonhill, the ancient seat of the novelist's family, is opposite to Alexandria. Several other mansions of handsome appearance enliven the road before it arrives at *Balloch* (at the foot of the lake), a small village and inn at the southern extremity of Loch Lomond, and 4½ miles from Dumbarton.

Loch Lomond measures 23 miles in length from north to south; its breadth, where greatest, at the southern extremity, is 5 miles, from which it gradually grows narrower between the enclosing hills, till it terminates in a mountain streamlet. The whole aqueous surface is calculated at 31¼ square miles, or 20,000 English acres, and it is studded by above thirty isles, mostly at the southern extremity. These islands, together with the shores of the lake, are in general clothed with dark wood, which gave occasion to a distinction very judiciously drawn a few years ago by a Swiss tourist between Lausanne and Loch Lomond: 'Our lake,' he said, 'is the fair beauty—yours the black.' The first isle that occurs is a long narrow one named *Inch Murrin*, at the southern extremity of which there is an old ruined fortalice called Lennox Castle, said to have formerly been a residence of the Earls of Lennox. This isle is now the property of the Duke of Montrose, who employs it for the keeping of deer. In succession from Inch Murrin, towards the north-east, occur *Inch Cro* (the Isle of Cattle), *Torr Inch* (the Wood Isle), and *Inch Caillach* (the Island of Women, having been the site of a nunnery). On the south side of Inch Caillach is *Clar Inch* (Flat Island), a very little member of the archipelago; at the north end the ruins of a castle are to be seen under water, testifying that the surface of the lake must have risen in the course of ages. Inch Caillach, which formerly gave name to the parish of Buchanan, and was the burial-place of the Macgregors, has on its north side *Inch Fadd* (Long Island), which bears grain and pasture, and near which is *Ellendarroch* (the Small Rugged Island). Another group to the northward stretch between the peninsula of Rossdoe, on the west side of the lake, and Strathcashel Point, on the east. *Inch Tavanagh*, the first in this group, and which derives its name from having once been the residence of a monk, contains 150 acres, partly covered with wood; it is the highest island in the lake. At a little distance to the south, the ruins of Galbraith

Castle, once the residence of a family of that name, start up from the water. To the east of Inch Tavanagh are *Inch Conagan*, covered with oak and fir, and *Inch Moan*, a low isle correctly described by its name, which signifies the island of moss. Still farther to the east are *Inch Cruin*, on which is an asylum for insane persons, and *Buc-inch* (Goat-Island). North from these lies *Inch Lonaig*, 150 acres in extent, and bearing many old yews, formerly of great use in furnishing the materials of bows and arrows. Of the whole thirty islands, the remainder are unimportant. South of Luss, the depth of the lake is rarely more than 26 fathoms: in the northern and narrower part it ranges from 60 to 100 fathoms; and in the places where deepest, never freezes. In ancient times Loch Lomond was famed for three wonders—'waves without winds, fish without fins, and a floating island.' The first phenomenon is attributed to a peculiar atmospheric effect, not easily described, but which has also been observed on the Cumberland lakes; vipers swimming from island to island account for the second; the floating island is supposed to have been a detached fragment of moss, or a matted mass of aquatic plants, which ultimately fixed itself near the west side of Inch Conagan.

Loch Lomond is skirted on the west side by the road from Dumbarton to Inverary. Less than a mile from the lower end of the lake, this road passes Cameron House, long the seat of the Smolletts of Bonhill, and described as such in the novel of 'Humphry Clinker,' where we have many panegyrics upon its scenery. A little farther on, the fine modern mansion of Belretiro overhangs the road upon the left. Here, through a fine vista, appears the polished expanse of Loch Lomond, its large islands, and the soft hills in the distance—a view that never fails to arrest the attention of the traveller. The objects that crowd into this scene are so finely diversified in form, in situation, and in colour, as to compose a picture at once beautiful and impressive. At the seventh mile-stone, upon the left, is the mansion of Arden, environed with woods, and placed at the bottom of a lofty hill called *Dunfion*, or the Hill of Fingal, tradition reporting it to have been one of the hunting-seats of that hero. Somewhat further on, and passing Nether Ross upon the left, the traveller crosses a small river called the Water of Fruin, which falls into the lake. It rises in *Glenfruin*, or Vale of Lamentation, so called, it is said, from a dreadful slaughter of the Colquhouns by the Macgregors in 1602, and on account of which the Macgregors were for nearly two centuries unceasingly persecuted by government. The promontory of *Rossdoe*, which forms a beautiful situation for the mansion of the same name, is then passed; after which a scene of uninterrupted beauty continues all the way to Luss, twelve miles from Dumbarton.

Luss, a delightful little village, on a promontory which juts into the lake, is much resorted to in summer, on account of its being a convenient station for tourists in search of the picturesque. One of the finest points for enjoying the scenery of Loch Lomond and the environs of Luss, is Stronehill, to the north of the village. At this point, about one-third of the way up a lofty hill, the whole breadth of the lake is spanned by the eye, including

> —'all the fairy crowds
> Of islands which together lie,
> As quietly as spots of sky
> Among the evening clouds.'

From this point the isles appear distinctly separated from each other, but not so much so as to give the idea of a map or bird-eye view, which a higher point of view would undoubtedly present. The prospect is bounded on the south by the distant hills which intervene between Loch Lomond and the Clyde, and which here appear, in comparison with the mountains around, to be only gentle swells; the Leven, its vale, the rock of Dumbarton, and even the surface of the Clyde, are in the same direction conspicuous. Towards the east, the vale of the Endrick, its principal seats, the obelisk erected to the memory of Buchanan at Killearn, and the Lennox Hills, are also distinctly visible. Turning to the north, the lake is seen to wind and recede far away among the mountains.

At *Inveruglas*, 3½ miles beyond Luss, there is a ferry to Rowardennan Inn, the usual starting-point for those who desire to ascend to the top of *Ben Lomond*. This mountain, situated in the county of Stirling, is 3240 feet above the level of the lake, which is 22 above the level of the sea. At Rowardennan, when looking northward, it almost completely fills up the view. It consists in three great stages, each rising above the other; these, again, are divided into a number of lesser swelling knolls, some of which are covered with heath and crags, while others are verdant and smooth. The distance from the inn to the top of the mountain is six miles of a continued ascent, which in general requires about three hours. From the summit, a varied and most extensive prospect opens upon the eye in every direction. The lake, lately contemplated with so much pleasure, now appears a small pool, and its rich and diversified islands as so many specks upon its surface. Beyond it, and to the left, appear the vale of the Endrick, the distant county of Lanark, its towns, and the mountain of Tinto; directly south, the outlet of the lake, the river Leven, its winding and rich banks, the Castle of Dumbarton, and the counties of Renfrew and Ayr; nearly in the same direction, the Firth of Clyde, the rock of Ailsa, the islands of Arran and Bute, with the more distant Atlantic. The coasts of Ireland and the Isle of Man are, when the atmosphere is clear, within the boundary of the view. To the east are seen the counties of Stirling and the Lothians, with the windings of the Forth, and the castles of Stirling and Edinburgh. The prospect to the north is marked by grandeur alone. Immense mountains, piled, as it were, above each other, and extending from the borders of Stirlingshire to the western ocean, with the indentations of the coast on one side, and the lakes of Perthshire on the other, form altogether a scene which may be conceived, but which cannot be properly described.

Ben Lomond has this remarkable advantage as a hill—that it is not overcrowned or crowded up with surrounding hills. It seems to be sole monarch of a vast undisputed territory. Nowhere, therefore, is there a better idea to be obtained of the Highland country than on its summit. The mountain itself, besides, affords a great variety of scenery. To the south it stretches out into a slope of a very gentle declivity. The north side is awfully abrupt, and presents a concave precipice of many hundred yards in depth. He must possess firm nerves who can approach the brink and look down unmoved. The rock is 2000 feet in sheer descent.

About 4½ miles to the north of Inveruglas, the Dumbarton and Inverary road reaches the lonely but comfortable inn of Tarbert, where there is also a ferry by which Ben Lomond may be approached. At this inn the road leaves the shore of the lake, and proceeds to the westward by the head of Loch Long, and so into Argyleshire. On the heights above, beside the way to Loch Katrine, are the remains of Inversnaid Fort, erected by the government in 1713 to check the turbulence of the Macgregors: near it is a little burial-ground, in which the garrison had interred their dead, and containing one or two monuments, which have long forgot to tell the familiar tale confided to them. The fort was taken by Rob Roy in 1716, but afterwards regained and re-established. It is said that the amiable General Wolfe at one time resided in it.

Firth of Clyde—Argyleshire.

This is a tract of scenery much admired and visited, on account of its presenting a fine combination of inland seas with islands of varied surface and chains of rugged mountains:—

The Clyde expands into an estuary a little way below Dumbarton. There, while the comparatively low hills

of Renfrewshire, with the thriving towns of Port-Glasgow and Greenock, are seen on the left, attention is called on the right to the towering alps of Argyleshire, sometimes ironically called the Duke of Argyle's Bowling-Green. The Argyleshire shores are here decorated with a long succession of villas, the favourite summer residences of the more affluent citizens of Glasgow. This mountainous region is penetrated by several inlets of the sea, one of which, named Loch Long, is 24 miles long. Another, named the Holy Loch, is shorter, but surrounded by equally picturesque ground. There is also an inland lake, Loch Eck, which presents some very beautiful scenery.

Separated from this rugged district by only a narrow strait is the island of *Bute*, displaying features only a little less highland, and remarkable for the amenity of its climate, on which account it is much resorted to by persons affected with pulmonary ailments. It measures 14 miles in length by about 4 in breadth, and contains some beautiful strips of level territory, in one of which is situated the mansion of the Marquis of Bute. The beautiful town of Rothesay, a favourite watering-station, occupies a fine situation on the north-east extremity of the island. Here are the ruins of a palace which formed the ordinary residence of the earliest sovereigns of the House of Stuart. The *Kyles of Bute*, as the strait above-mentioned is named, is remarkable for the fine vistas of alpine scenery which it opens up to the view of the tourist.

To the south of Bute lies the island of *Arran*, 22 miles long, and which entirely consists of a range of rocky mountains, the serrated outline of which, as seen from the neighbouring seas and shores, is extremely grand. The loftiest summit, Goat-fell (called by the natives *Goath-bhein*, the Hill of Storms), is 2800 feet high. Arran bears great value in the eyes of the geologist, on account of its presenting, within a narrow space, an epitome of the whole geological structure of Scotland. Its pathless glens and picturesque hills commend it equally to visitors who do not inquire into the mysteries of stratification and volcanic agency. The whole island, excepting a few small farms, belongs to the Duke of Hamilton, whose ancestor, James first Lord Hamilton, obtained it from the crown on his marrying Mary, the eldest daughter of James II., in the year 1474. There are now a number of large farms enclosed, subdivided, and well cultivated, having fine stocks of cattle and comfortable farm-steadings, where formerly there were numerous huts without chimneys or windows, and ridges running in all directions without a single enclosure or subdivision. At the north end of the island, under the lofty and isolated summit called the Cock of Arran, a small bay, denominated Loch Ranza, serves as a natural harbour, in which capacity it is turned to great advantage in the herring-fishery. On the shore of the bay there are a few scattered houses, an inn, an ancient castle in ruins, and a preaching station. A road sweeping round the east shore of the island leads to Brodick Bay, at the bottom of which there is a beautiful tract of low and sloping ground, ornamented with some fine wood, containing a hamlet, which forms a favourite resort for sea-bathing. On the adjacent height, amidst ancient woods, is the ancient château of Brodick, a mansion of the Duke of Hamilton. From this place a road strikes across the island, and opens up some magnificent scenery. Two or three miles to the southward of Brodick, the shore forms the more spacious recess of Lamlash Bay, at the bottom of which is a village of the same name, while it is landlocked in front by Holy Island, a small isle which formerly contained a monastery. Lamlash Bay is of great importance to the navigation of the Clyde and Irish Channel, as a harbour of safety.

Loch Fyne, a long narrow estuary, having the ridgy promontory of Kintyre on the one side and the district of Cowal on the other, opens up much fine scenery. In sailing up the loch, the first remarkable place is Tarbert, a fishing village situated at the bottom of a beautiful small bay, with a ruined fortalice of the Argyle family perched on a rock by its side. Farther up the loch is Inverary, the beautifully-situated, village-like county town, chiefly forming a mere dependency of the neighbouring Inverary Castle, the principal seat of the ancient and illustrious House of Argyle. The rugged sylvan scenery around this mansion, with its views of seas, mountains, and distant islands, excites general admiration. Between Inverary and the inn of Tarbert on Loch Lomond, a road opens up a splendid tract of mountain scenery, the most striking being comprehended in the valley of Glencoe. Another road, proceeding in a northerly direction, leads to Loch Awe, an inland lake possessing many fine features, and upon which stands the ruined castle of Kilchurn, once the chief stronghold of the Breadalbane family. The loch is overhung by Ben Cruachan, a mountain 3390 feet in height, on the skirts of which King Robert Bruce gained a victory over his powerful enemy the Lord of Lorn.

The northern portion of Argyleshire, where it is bounded by the Western Ocean and its many inlets, contains much fine scenery. In a sheltered situation on the west coast stands the neat and cheerful town of Oban, a point of rendezvous for the numerous steamers permeating these seas, and a kind of entrepôt for the rural produce of the wide district around it. In front is the isle of Kerrera, where Alexander II. died in the course of an expedition to the Western Islands. On the coast, a little to the north of Oban, is Dunolly Castle, the mansion of the Macdougals of Lorn; and a little way farther north is Dunstaffnage, an ancient seat of the Caledonian kings, occupying a commanding site on the top of a rock overlooking the sea.

Loch Linnhe, opening between Lorn and Morven, and the commencement of the chain of salt and fresh-water lakes formed into the Caledonian Canal, presents on both sides scenery of a most romantic character—a mixture of bold rocky forelands, on many of which are perched the eyrie-like fortresses of the rude chiefs of the olden time, and green smiling hollows, within bays, where the elegant habitations of a modern gentry have been placed. The long island of Lismore, in the mouth of this estuary, was the ancient appanage of the bishops of Argyle, and temporarily the site of a college for Catholic priests, after the French seminaries were closed by the Revolution; but is now only remarkable for the great quantity of limestone exported from it. Opposite to its upper extremity, Loch Creran, a sub-estuary, branches off into the land of Lorn, opening up much beautiful scenery. On the south shore of Loch Linnhe, to the north of the opening of Loch Creran, is the district of Appin, previous to 1765 the property of a race of Stewarts, descended from a natural son of the last Lord Lorn, and for four centuries conspicuous in Highland history. In this district, the first mansion which occurs to the north of Loch Creran is Airds, the seat of Sir John Campbell. Next is the ruin of Castle Stalker, an ancient massive building. Appin House, the seat of Mr Downie of Appin, next occurs; and after that, at the mouth of Loch Leven, Ardshiel (Stewart, Esq.). From Ballahulish Ferry on Loch Leven, noted for its great quarry of slate, the west Highland road penetrates the savage vale of Glencoe.

Glencoe opens a little to the north of a solitary inn called the King's House, and extends about 10 miles in a north-westerly direction to Ballahulish. It may be described as a narrow strip of rugged territory, along which hurries the wild stream of Cona, celebrated by Ossian, who is said to have been born on its banks. On each side of the narrow banks of this river, a range of stupendous hills shoots perpendicularly up to the height of at least 2000 feet, casting a horrid gloom over the vale, and impressing the lonely traveller with feelings of awe and wonder. The military road sweeps along the right side of the glen. From the sides of the hills an immense number of torrents descend, sometimes sweeping over and spoiling the road, which is always, therefore, in a very precarious state. From the one end of the vale to the other only one human habitation is to be seen; and as it is not a road of much cur-

rency, the traveller may pass through it without meeting a single human being. The goats scrambling among the rocks, and the wild eagle hovering about the tops of the wall-like hills, are usually the only living objects within sight; and, as may be conceived, these rather increase than diminish the wildness and desolation of the scene. The place where the famous massacre of Glencoe happened is at the north-west end of the vale.

Inverness-shire—The Great Glen.

Between Loch Linnhe on the west coast, and a point on the Moray Firth near Inverness, there is a remarkable natural phenomenon, in the form of a glen or hollow, passing in a perfectly straight line for 60 miles through a mountainous region, and the bottom of which is nowhere more than 90 feet elevated above the level of the sea. It is called by the Highlanders *Glen-more-na-Albin* (the Great Glen of Scotland). A chain of lakes extending along this extraordinary hollow suggested the formation of a canal which should admit of navigation between the seas on the two sides of the island, and save the dangerous passage round by the Pentland Firth; and this, under the name of the *Caledonian Canal*, was formed between 1803 and 1822, under the care of Mr Telford, at an expense of £800,000. (See Vol. I., p. 411.)

The canal commences at Clachnaharry, in the outskirts of the town of Inverness, and after six miles, enters the first of the chain of lakes, *Loch Ness*, a grand piece of water, 23 miles long, situated amidst stupendous and sterile mountains. The waters of Loch Ness never freeze, but they are often agitated simultaneously with the occurrence of earthquakes in distant parts of the world. On an elevated rock projected into the north-east margin of Loch Ness, are situated the remains of Urquhart Castle, consisting of a great square keep and several exterior walls of defence. It was besieged in 1303 by the officers of Edward I., and with great difficulty taken; it afterwards was a royal fortress; and finally, in 1509, it became the property of Grant of Grant, ancestor of the Earl of Seafield, to whom it now belongs. Glen Urquhart, which recedes behind Urquhart Castle, is a beautiful Highland vale, sometimes likened to Tempe, and containing many gentlemen's seats and a good inn. The conspicuous mountain, *Mealfourvonie* (Hill of the Cold Moor), upwards of 3000 feet in height, here begins to raise its huge bulk above the banks of the loch. About 500 feet from the summit there is a lake about a mile long, which cannot be much less than 3000 feet above the level of Loch Ness. On the top of the hill there is a cairn, the accumulation of which must have been a work of great labour. Mealfourvonie stands so prominently above the neighbouring hills, that it is not only singled out by the eye at Inverness, but is the first landmark seen on entering the Moray Firth, at the distance of a hundred miles.

The road along the south side of Loch Ness, though it presents numberless fine views, is enlivened by few traces of man's presence. The paucity of houses gives a sort of distinction to the inn named General's Hut, nearly 18 miles from Inverness, originally the residence of General Wade, while superintending the formation of his roads. Little more than a mile farther on, a recess or chasm in the hill by the side of the lake contains the celebrated *Fall of Foyers*. At the bottom of the recess there is a smooth little plain, descending upon the lake, ornamented by the house and shrubberies of Foyers, and where the steamers usually disembark such passengers as may desire to behold the waterfall. A path accessible to carriages, winds backwards and forwards, up the face of the hill, till the height of the public road is reached; and then there is a pathway leading down the face of the crags, towards a projecting rock, on which visitors usually stand to see the Fall. The Foyers is not a very copious stream, except in rainy weather; consequently there are great variations in the aspect of the cascade. In its medium fulness it pours through a narrow gullet in the rock, in a round unbroken stream, which gradually whitens as it descends, till it falls into a half-seen profound, usually described as two hundred and forty feet below the point of descent, though this is supposed to be an exaggeration. A dense mist is constantly seen rising from the broken water, like the heavenward aspirations of an afflicted and tortured spirit. The noise is usually very loud. About a quarter of a mile farther up the ravine there is another cascade, usually called the Upper Fall—a fearful gulf, down which the water descends by three leaps, and over which a bridge has been thrown, by way of station for a sight of the cataract. The whole of this stupendous ravine is covered by birches, on whose every leaf a pearl of vapoury dew is constantly hanging.

A few miles farther on, *Glenmorrison* opens upon the north-west bank of Loch Ness. It is a valley full of romantic scenery, and belongs to a branch of the family of Grant. While the steam-borne traveller necessarily pursues the route by the lake, the traveller by the south road, after passing Foyers, leaves the brink of that piece of water, and advances into *Stratherrick*, a long valley behind the line of hills which overlook Loch Ness. A secluded valley called Killean, opening upon this part of the road near Whitebridge, is spoken of as a singularly secluded and romantic piece of scenery. At the distance of thirty-two miles from Inverness, the road descends upon Fort-Augustus and the little village of Killicumming, so called as the burying-place of the Cummings, Lords of Badenoch.

Fort-Augustus, situated in a pleasant opening amongst the hills, at the termination of Loch Ness, was erected in 1730 as an addition to the means previously existing for the control of the turbulent children of the mountains. Its purposes being long since accomplished, it has for many years been only occupied by two or three artillerymen. From Fort-Augustus, the cut of the canal is resumed, and several locks are ascended; a very few miles brings it to *Loch Oich*, the smallest of the chain of lakes. The scenery is here finer than at any other part of the Great Glen. On the north-west bank of the loch is Invergarry, till a recent period the residence of the chief of Glengarry, a handsome modern building, in the immediate neighbourhood of an older mansion, which has been in ruins since burnt down by the king's troops in 1746, in consequence of the part taken by the chief in the rebellion.

The next and last loch is *Loch Lochy*, the hills environing which are the most hopelessly wild and stupendous of all in the glen. The summit-level of the canal is between Loch Oich and Loch Lochy, being 90 feet above the ordinary high-water mark at Fort-William, and 94 above that at Inverness—a difference to be accounted for by the pressure of the Atlantic on the west shores of Scotland. The lonely little inn of Letter Findlay is the only house at first seen on Loch Lochy; but when the west end is nearly reached, the traveller discovers, in a recess on the right side, the House of Auchnacarrie, which was the residence of the gallant and unfortunate Lochiel before he entered upon the fatal campaign of 1745. The canal, after leaving this loch, descends in a precipitous series of locks, called *Neptune's Staircase*, into Loch Eil, a continuation of Loch Linnhe, the arm of the sea formerly mentioned.

At this point the glen is more spacious than anywhere else. It is, however, the spaciousness of a moor. The River Lochy, which issues from the lake of the same name, pours its voluminous and impetuous flood towards Loch Eil on the left; and beyond it Ben Nevis is seen to rear his enormous head, with the vale of Glen Nevis withdrawing from his mighty side into the solitudes of Lochaber. At the distance of little more than a mile is the town of Fort-William, so called from a fortress of the same name built for the repression of Highland turbulence, and now nearly disused.

A cluster of glens to the south of the Great Glen, is remarkable for a natural phenomenon, usually called the Parallel Roads of *Glenroy*, such being the name of

the vale in which the wonder is most conspicuously marked. It consists of a set of terraces, in most places three in number, extending along both sides of these vales for many miles, the uppermost 82 feet above the second, which, again, is 212 feet above the first. The common people represent these terraces as roads formed at the command of Fingal, an early hero, for his convenience in hunting; but they are in reality ancient beaches of inland seas—phenomena with which modern geologists are familiar.

Western Islands.

The Western Islands are generally bleak and rugged in surface, and occupied by a very poor class of tenantry. In some of them, particularly Skye and Eigg, the scenery attains to a savage grandeur. It is not possible here to present a particular description of any besides the Isle of *Staffa*, so remarkable for its basaltic structure. It is about 1½ miles in circumference, and bears no human habitation, its only useful tenants being a small herd of black cattle. At the point of greatest elevation towards the south-west, this island is 144 feet high. On the north-east it presents a face of somewhat less height, composed of basaltic columns, and penetrated by several caves of various sizes, into which the sea occasionally breaks with the report of thunder. This face, according to Dr Macculloch, is formed of three distinct beds of rock, of unequal thickness, inclined towards the east in an angle of about 9 degrees: the lowest is a rude trap tufa; the middle one is divided into columns placed vertically to the planes of the lowest bed; and the uppermost is an irregular mixture of small columns and shapeless rock—the whole being partially covered by a fine verdure. The central columnar part having in some places given way, is the occasion of the numerous caves by which the island seems perforated.

At the north-east point of the island, the dipping of the rocks is so low as to afford a safe landing-place at any time of the tide. Proceeding thence, the visitor is conducted along the north-east face, and is introduced to the *Clam-shell* (Scallop) *Cave*, where a curious confusion in the columnar structure is observable. The columns on one side are bent, so as to form a series of ribs, not unlike the inside view of the timbers of a ship; while the opposite wall is formed by the ends of columns, bearing a general resemblance to the surface of a honeycomb. This cave is 30 feet in height, and 16 or 18 in breadth at the entrance; its length being 130 feet, and the breadth contracting to the termination. Next occurs the noted rock, *Buachaille* (the Herdsman), a conoidal pile of columns, about 30 feet high, lying on a bed of curved horizontal ones, visible only at low water. There is here an extensive surface, resembling that of the Giants' Causeway, and composed of the broken ends of pillars once continuous to the top of the cliff. The colonnade is now for some distance upright and very grand, till the visitor reaches the *Uaimh Binn* (Musical Cave), usually called *Fingal's Cave*, by far the most impressive and interesting object in the island. It opens from the sea with a breadth of 42 feet, a height of 66 feet above the water at mean tide, the pillar on one side being 36 feet high, and that on the other 18. The depth of the recess is 227 feet, and the breadth at the inner termination 22. The sides within are columnar throughout; the columns being broken and grouped in many different ways, so as to catch a variety of direct and reflected tints, mixed with secondary shadows and deep invisible recesses. As the sea never ebbs entirely out, the only floor of this beautiful cave is the fine green water, reflecting from its white bottom tints which vary and harmonise with the darker tones of the rock, and often throwing on the columns flickering lights, which its undulations catch from the rays of the sun without.

ANTIQUITIES, &c.

There are in Scotland, and particularly in the district between the Firth of Tay and Moray Firth, numerous mounds, upright slab stones, and carved stones, which are supposed to have been raised as monuments over slain warriors, by the early inhabitants of the country, or by the Danes or other northern nations who occasionally invaded it in remote times. The most remarkable examples of mounds are two at Dunipace on the Carron in Stirlingshire, and one at Fettercairn in Kincardineshire. A distinct class of mounds, called *moot* or *moat hills*, are common in the south-western and several other districts. They are generally of a square form, with a flat top. It is believed that they served as places for the administration of justice in rude ages. Such is the opinion of the antiquary, who regards these mounds as *artificial*, and raised for a specific purpose; but to the geologist acquainted with the phenomena of raised beaches, moraines, and denudations, they appear, what in most instances they really are, substantial *natural* accumulations, which may have been employed by our early ancestors as above described, but which assuredly were never erected by them. For a geological account of the mounds of Dunipace the reader is referred to an article in 'Chambers's Journal,' No. 144, New Series.

Of the carved stones, a remarkable example exists at Forres. It contains figures of men and animals in various compartments. There is another very entire and curious specimen at Aberlemno in Forfarshire. A third at Meigle is remarkable as containing a representation of one of the war-chariots used by the original inhabitants of the country.

In the north of Scotland, and in Orkney, there are some surviving examples of a very remarkable class of early buildings, to which the common people now give the name of *Picts' Houses*, as supposing them to have been built by the Picts. They are generally round buildings, of no great height, with round vaulted tops, altogether built of courses of dressed stone without mortar, and containing for the most part one central chamber, and several long narrow recesses in the thickness of the wall. Circular mounds, the remains of British and Danish camps, are common on the tops of the Scottish hills, having probably been the places to which the early people retired with their flocks in times of danger. On several hills, particularly in Perthshire and Inverness-shire, there are remains of walls, presenting appearances as if the stony materials had been artificially vitrified. It is not yet ascertained whether these *vitrified forts*, as they are called, were works of our Caledonian ancestors, or the effect of accident, though the former is the more likely supposition.

The weapons used by the aboriginal people are often found, consisting of stone axes, arrow-heads of flint, &c. Necklaces, bracelets, and other ornaments used by them, barbarous in style, but generally of gold, are also often found. In various districts Druidical circles still exist in a tolerably entire state; but none on so large or regular a scale as those of Stonehenge and Abury. There are remains of roads and camps formed by the Romans in their hesitating and imperfect attempts to subdue North Britain; and of the wall built under the Emperor Antoninus, between the Firths of Forth and Clyde, with forts at regular intervals, it is still possible to discern a few traces.

The next class of antique objects are the remains of the Gothic fanes, reared on account of religion during the period when the Romish church was triumphant. These are everywhere very numerous, but in few cases tolerably entire. Excepting two cathedrals, those of Glasgow and Kirkwall (in Orkney), all of that class of structures are in ruins. The abbeys, priories, and other conventual and collegiate establishments, are in every instance gone to decay. Melrose Abbey, the Cathedral of Elgin, and the Collegiate Church of Roslin, are the most beautiful of these ruinous buildings.

Numerous specimens of the towers and castles occupied by men of note in the middle ages still exist, though mostly in a decayed state. Those which indicate the greatest strength and consequence are—*Lochmaben Castle*, the residence of the Bruces, Lords of An-

nandale; *Hermitage* (Roxburghshire), which belonged to a powerful noble named Lord Soulis; *Douglas*, the residence of the Earls of Douglas; *Turnberry* (Ayrshire), the residence of the Earls of Carrick; *Bothwell*, another stronghold of the Douglases; *Tantallon* (Haddingtonshire), the residence of the Earls of Angus, a branch of the Douglas family; *Dunnottar* (Kincardineshire), the seat of the Earls Mareschal; and *Doune* (Perthshire), the stronghold of Robert Earl of Fife, brother of Robert III., and governor of Scotland. Four places of strength, *Edinburgh*, *Stirling*, *Dumbarton*, and *Blackness Castles*, are still kept in repair at the public expense, and serve as barracks for foot soldiers.

The *mansions* of the nobility and gentry of Scotland do not differ in any important respect from similar classes of structures in England. The 'hall' is, however, completely wanting in Scotland, and there are comparatively few specimens of the Elizabethan style. Turbulent times being more recent in Scottish than in English history, the chief mansions of an unfortified character in the northern kingdom are not of earlier date than the reign of Charles II., and most of them are much later. In many instances, the whole or part of the original castellated buildings which stood on the same site have been retained.

In the reign of Charles II., mansions were for the first time built in anything like pure Grecian taste. This was introduced by Sir William Bruce of Kinross, Bart., an architect of considerable skill, and of whose works the modern Holyrood Palace, and his own house of Kinross, are examples. During the last century, the mansions built in Scotland have partaken of all the changes of taste passing through England, from the heavy barrack-like structures of Sir John Vanburgh, to the light and elegant Grecian style of Adam. We have now châteaux in the style of the middle ages; Grecian structures by Adam; mansions in the Doric and more sombre Grecian style since introduced; and very lately, a few specimens in the priory and Elizabethan styles. (See ARCHITECTURE, Vol. I.)

CHIEF CITIES, TOWNS, PORTS, &c.

Edinburgh, the capital, is situated in the county of the same name, on a cluster of eminences, distant between 1½ and 3 miles from the Firth of Forth. The city is composed of two principal parts, the Old and New Towns; the former being built on a long narrow eminence gently rising towards the west, where it terminates in a lofty and abrupt rock, on which the castle is situated; while the latter occupies lower ground towards the north. The town is universally built of a fair sandstone, which retains its original colour in the newer parts of the town and in the best public buildings, and forms one of the most important features of Edinburgh. The New Town is laid out on a regular plan of rectangular streets and squares, exhibiting in general much architectural elegance. Between the Old and New Towns, and between various sections of the New Town itself, as well as in the centres of the principal squares, there are gardens laid out in the modern landscape style, forming delightful places of recreation. It is chiefly owing to the unequal ground on which Edinburgh is situated, the massive elegance and regularity of its buildings, the intermixture of ornamental pleasure-ground, and the picturesque hills immediately adjacent, whence distant and extensive prospects are commanded, that this city makes so great an impression on most strangers.

Formerly the seat of the government of the country, Edinburgh is still that of the supreme law-courts and of a flourishing university. It is also to a great extent a city of residence, not only for affluent persons connected with the country, but for strangers desirous of enjoying a society of moderate habits, and the benefits of education for their children. Its leading classes are thus composed of legal practitioners, learned persons, and families in independent circumstances. It is only in a small degree a manufacturing town, the principal trades being the brewing of ale (for which the town is celebrated), coachmaking, the weaving of shawls, and the printing and issuing of literary productions. The leading periodical publications are the Edinburgh and North British Reviews, Blackwood and Tait's Magazines, a Philosophical and Medical Journal, one or two Ecclesiastical Magazines, besides several weekly sheets of extensive circulation. The town is distinguished for its numerous banking institutions, which exert an influence on the general trade of the country. Within a few miles of the city, on the Esk River, there are various paper-mills, at which vast quantities of paper are made, both for the home trade and for exportation to London. The city is now the centre of the Scottish railway traffic, having lines and telegraphs communicating with Perth, Dundee, and Aberdeen, on the north; with Glasgow on the west; with the west of England *via* Carlisle; and with the east of England *via* Berwick and Newcastle. The transit to London can be made in twelve hours, and communications by telegraph in less than an hour.

Amongst the remarkable objects in the city, the most striking is the Castle, a large fortress romantically situated on the summit of a mass of igneous rock, between 200 and 300 feet in sheer height. It contains, besides various batteries and other fortifications, an ancient palace, in which Queen Mary was delivered of her son James I. of Great Britain, and a modern barrack, in which a foot regiment is usually quartered. In a well-protected room are shown the crown, sceptre, mace, and sword, which formed the regalia of the Scottish line of princes. The Courts of Law are situated in the centre of the Old Town, and are composed of a great hall, formerly the meeting-place of the Scottish Parliament, rooms for the two various divisions of the civil court and for the lords ordinary, a room for the High Court of Justiciary (supreme criminal court), and other accommodations. The extensive libraries belonging respectively to the Advocates (barristers) and Writers to the Signet (solicitors) are adjacent; the former being a collection of upwards of 150,000 volumes. Holyroodhouse, the palace of the Scottish kings, is situated at the lower extremity of the principal street of the Old Town. The oldest part is a mass of building erected by James V., containing the presence-chamber, bedroom, and other apartments, used by Queen Mary, with some of the original furniture; as also a gallery, furnished with (generally imaginary) portraits of the kings of Scotland. The apartments of the queen are to be regarded with no ordinary interest, both as furnishing a curious and faithful memorial of the domestic accommodations of a princess of the sixteenth century, and on account of that extraordinary incident, the murder of David Rizzio, which took place within them. Another part of the building, erected in the reign of Charles II., contains the apartments used by George IV. for his levée in 1822, and a suite of rooms which furnished accommodation to Charles X. of France and his family, during the years 1831–2–3. Closely adjoining to the palace are the ruins of a Gothic church, originally that of the Abbey of Holyrood, and latterly a chapel-royal.

The College is a large modern quadrangular building, in the southern quarter of the city. It contains class-rooms for the professors (33 in number), a library of splendid proportions and decoration, and an extensive museum of natural history. The university is chiefly distinguished as a school of medicine; but it is also the means of preparing a great number of the native youth for the professions of law and divinity. The Register-House is a beautiful building, planned by Adam, in a conspicuous part of the New Town; it contains the records connected with the legal business of the country. The Royal Institution is the general appellation of an elegant building facing the centre of Princes Street, and containing halls for various public bodies, as the Royal Society of Edinburgh, the Antiquarian Society of Scotland, the Scottish Academy of Painting and Sculpture, and an academy for instruction in drawing. Of places of worship, the most re-

markable are St Giles's Church in the Old Town (once the cathedral), a Gothic building of the fifteenth century, lately renovated; St George's, St Stephen's, and St Andrew's, modern churches of the establishment; and St Paul's and St John's, elegant Gothic chapels of the Episcopalian body. There are two Roman Catholic chapels, and many dissenting places of worship. Of the other public buildings, the most remarkable are the Infirmary; the hospitals for the maintenance and education of poor children, of which Heriot's and Donaldson's are the most elegant; the Surgeons' and Physicians' Halls; and the offices of the Bank of Scotland, of the Royal, Commercial, and other banks. On the Calton Hill are situated some other public structures, as the County Jail and Bridewell; monuments to Nelson, Dugald Stewart, Burns, and Professor Playfair; an astronomical observatory, and a small portion of a building designed as a national monument to the Scotsmen who perished in the last war, but which will probably never be completed. In Princes Street Gardens stands the monument erected in honour of Sir Walter Scott—a superb structure of Gothic design, and undoubtedly one of the leading ornaments of the city. The population of Edinburgh and Leith in 1821 was 138,235; in 1831, 162,403; and in 1841, 166,450.

Leith, the seaport of Edinburgh, but an indendepent parliamentary burgh, is situated at the efflux of the rivulet of the same name, which originally constituted its harbour. The older part of the town is crowded and mean, but in the outskirts there are some good streets. The town is connected with Edinburgh by a broad and beautiful road, above a mile in length, denominated Leith Walk. Besides the quays skirting the embouchure of the river, there is a range of wet-docks, and extensive operations are now in progress for the improvement of the harbour, which labours under several heavy natural disqualifications. During spring-tides, the utmost depth of water on the bar at the mouth of the river is 17 feet—during neap-tides, 14 feet; and it is rarely that a vessel of 400 tons can gain admission. The want of deep water at Leith is partly supplied by a small harbour at Newhaven, an extensive and substantial stone-pier at Granton, and a chain-pier at Trinity, which serve as places of embarkation and debarkation for steamers and other vessels devoted chiefly to passengers. The chief foreign trade of Leith is with the ports in the Baltic and north of Europe; next to this in importance ranks its intercourse with the West Indies. But the imports of Leith are chiefly for local consumption, and bear little reference to the great manufacturing business of the country. For the coasting trade there are various companies, each of which has several vessels in employment. Amongst the ports with which regular intercourse is carried on by steam, may be mentioned London, Hull, Newcastle, Dundee, Aberdeen, Hamburg, and Rotterdam. The tonnage belonging to Leith is somewhat stationary: it was, in 1826, 25,674; in 1832, 23,094; in 1835, 22,073; and in 1845, 22,258—of which 2,750 belonged to vessels under 50 tons burthen, and 19,508 to vessels upwards of 50 tons. In the same year the number of sailing vessels under 50 tons was 190; above 50 tons, 118. Besides the above there were 8 steamers under 50 tons, having an aggregate tonnage of 199; and 9 steamers above 50 tons, having an aggregate tonnage of 1,972. In 1844 the nett receipt of customs' duties was £500,924; in 1845 it was £606,407. In Leith there are several breweries, a sugar-refining establishment, and several manufactories of soap, candles, ropes, and glass. The Custom-house, an elegant modern building, is the seat of the Board of Customs for Scotland. In 1831 the population of Leith was 25,855; in 1841, 33,473. The town, in union with Newhaven, Portobello, and Musselburgh, returns a member to parliament.

Glasgow, the most populous city in Scotland, occupies a highly advantageous situation on the banks of the Clyde, in Lanarkshire, a few miles from the place where the river expands into an estuary, 42 miles from Edinburgh, 397 from London, and 196 from Dublin. The external appearance of this great city is elegant and impressive. The streets are regular in arrangement, and substantially built of smooth stone. The public buildings are in general handsome, and in most instances disposed in such a manner as to be seen to advantage. The more ancient part of the city extends along the line of the High Street, between the Cathedral and the river; the more modern and elegant part stretches towards the north-west. On the left bank of the river, and connected by three bridges, is situated the populous barony of Gorbals, bearing the same reference to Glasgow which Southwark bears to London. Westward from the lowest of the bridges, both sides of the river are formed into quays, which, owing to recent operations for deepening the channel, are now approached by vessels drawing about fourteen or fifteen feet water. The quay on the north bank is denominated the *Broomielaw*: it was recently extended to 3340 feet in length, while that on the south bank is 1260 feet; and is still, along with the entire navigation of the river, undergoing important improvements.

Glasgow took its rise as a dependency of the cathedral of the bishops (latterly archbishops) of the see bearing its name. It was not, however, till long after the Reformation that it became a seat of considerable population. About the middle of the eighteenth century, it had acquired a considerable share of the import colonial trade, which it still retains; but during the last seventy years, it has chiefly been distinguished as a seat of manufactures. The weaving of lawns, cambrics, and similar articles, commenced in Glasgow in 1725. The advantages enjoyed by the city for the importation of cotton, in time gave a greater impulse to that species of manufacture. In 1834, out of 184 cotton-factories existing in Scotland, 100 belonged to Glasgow and its neighbourhood; and the importation of cotton into that port amounted to 95,703 bales. In the weaving of this material, upwards of 15,000 power-looms, and 32,000 handloom weavers, were at the same time employed by the manufacturers of Glasgow. In 1845 there were in Glasgow and neighbourhood, 784,756 spindles, and 7647 workers; 17,620 power-looms, and 11,200 workers. The value of the spinning-factories was estimated at £784,756; of the power-loom or weaving factories, at £264,300. The calico-printing establishments, connected with the chief manufacture, are between 40 and 50 in number. It would be vain to attempt an exact enumeration of the less prominent features of the business carried on in Glasgow. The chief articles of importation besides cotton are sugar, rum, tea, tobacco, and timber. The chief articles manufactured or prepared besides cotton goods are sugar, soap, glass, iron, ropes, leather, chemical stuffs, and machinery. There were recently seven native banks, and several branches of other banks. During a year, extending from a certain period in 1839 to a certain period in 1840, 5484 vessels, of 296,302 tonnage, arrived at the Glasgow harbour; the customhouse revenue of 1839 was £468,975, and the harbour dues of the twelvemonth ending August 31 of that year were £45,826. In 1845, 438 vessels belonged to Glasgow, with an aggregate burthen of 117,000 tons; and in the same year the gross receipts at the customhouse were £551,851. It is worthy of remark, that the Clyde was the first river in the elder hemisphere on which steam navigation was exemplified. A steam-vessel of three-horse power was set afloat on the river in January 1812, by Mr Henry Bell of Helensburgh; and there were twenty such vessels on the Clyde before one had disturbed the waters of the Thames. In 1845 there were sixty-seven steam-vessels, of 11,100 aggregate tonnage, connected with Glasgow, eighteen of which plied to Liverpool, Belfast, Dublin, and Londonderry. Within the last few years the city has become a great centre of the iron trade, this metal being produced in the neighbourhood to an annual amount of not less than 200,000 tons. As a necessary consequence of the commerce and manufactures which flourish in Glasgow,

the city has a vast retail trade in all the articles of luxury and necessity which are used by human beings. But no circumstance connected with Glasgow could give so impressive an idea of the height to which business has been carried in it, as the rapid advance and present great amount of its population. By the census of 1791, the inhabitants were 66,578; and by the first government census in 1801, they were 77,385. But these numbers have been increased in 1811 to 110,749; in 1821 to 147,043; in 1831 to 202,426; and in 1841 to 274,533—a mass of population which, at the time of the Union, could not have been dreamt of as likely ever to exist in any Scottish city.

The Cathedral, or High Church, is situated in the northern outskirts of the city, near the upper extremity of the High Street. The walk of the existing building was constructed at the close of the twelfth century, in place of another which had been consecrated in 1136, but was destroyed by fire. It consists of a long nave and choir, a chapter-house projecting from the north-east angle, a tower and spire in the centre, and a crypt extending beneath the choir or eastern portion of the building. In the nave, termed the Outer High Kirk, was held the celebrated General Assembly of the Church, November 1638, by which Episcopacy was abolished and pure Presbytery replaced—the first great movement in the civil war.

The elevated ground near the east end of the Cathedral has been formed into an ornamental place of sepulture, under the appellation of the Necropolis. Since 1831, the Society of Merchants, its proprietors, have expended the sum of £6000 in laying out about twenty-four acres of ground in walks and shrubberies, and in connecting the spot with the opposite slope by means of a bridge across the intermediate rivulet. The taste manifested in the whole scheme and in its execution is extremely creditable to the city. The walks, several miles in extent, command an extensive view of the neighbouring country. They are skirted by numberless sepulchral plots and excavations, where already affection has been busy in erecting its 'frail memorials,' all of which, it may be mentioned, are fashioned according to certain regulations, with a view to general keeping and effect.

The College buildings are situated on the east side of the High Street, about half-way between the Cathedral and the Trongate. They consist in a sort of double court; the front which adjoins to the street being 330 feet in length, and three storeys in height. The whole edifice has a dignified and venerable appearance. A large piece of ground behind the College is formed into a park or green, interspersed with trees and hedges, and always kept in grass, to be used by the students as a place of exercise or amusement. In the College there are appointed professors or teachers of about thirty branches of science, theology, and polite literature. At the back of the interior court stands the modern Grecian building which contains the Hunterian Museum. This is a large collection of singular natural objects, coins, medals, rare manuscripts, paintings, and relics of antiquity, originally formed by Dr William Hunter, the celebrated anatomist, and bequeathed by him to this university, at which he received his education. While the College confers professional education, popular instruction is attainable, under unusually advantageous circumstances, through the medium of the Andersonian Institution, an extensive school of science founded at the close of the last century, and connected with which there is a general museum, containing many curious objects, and constantly open to the public.

The most attractive modern building in Glasgow is the Royal Exchange in Queen Street, a most superb structure, erected in 1829, as a point of assemblage for the merchants in the western part of the city. The principal room is a large hall, supported by a double row of columns, and used as a reading-room. The front of the Exchange consists of a magnificent portico, surmounted by a cupola; and as the building is isolated, the other sides are also of decorative architecture. Altogether this building, supported by a set of very elegant domestic structures of similarly august proportions, impresses the mind of a stranger as something signally worthy of a great city.

Since the Reform Act of 1832, Glasgow has the privilege of returning two members to parliament. The places of worship, charitable and educational institutions, and associations of various kinds for public objects, are very numerous. A laudable zeal for the improvement of education marks the city; and a normal school, or seminary for the rearing of teachers—the first in the empire—has been erected under the auspices of a private society.

The means of communication in connection with Glasgow, are suitable to the character of the city as one of the greatest emporia of commerce and manufacture in the world. Besides a river, navigable by vessels drawing fifteen feet of water, and which gives the means of a ready communication with the western shores of Britain, with Ireland, and with America, the Forth and Clyde Canal, of which a branch comes to Port-Dundas, in the northern suburbs, serves to convey goods and passengers to the eastern shores of the island, while canals of less note connect the city with Paisley and Johnstone in one direction, and with the great coal-fields of Monkland in the other. There is also railway communication connecting it with Edinburgh and the north of Scotland on the one hand, and with the south of Scotland and England on the other. The steam communication between Glasgow and Liverpool, Dublin and other Irish ports, is conducted on a scale which may be called grand. The vessels are superb in magnitude, decoration, and power; and they sail frequently and rapidly. The steam intercourse between Glasgow and various places in Scotland, both for passengers and objects of traffic, is also conducted on a great scale: among the places touched at in the Clyde and to the south are Greenock, Dumbarton, Dunoon, Rothesay, Arran, Gourock, Troon, and Ayr. Among the places to the north to which vessels sail regularly are Inverary, Campbeltown Oban, Staffa and Iona, Mull, Arisaig, Skye, Stornoway, and Inverness. In opening up markets for West Highland produce, and introducing luxuries in return, these vessels have also been of marked service, insomuch that the value of property in those hitherto secluded districts has experienced a very considerable rise.

The country around Glasgow, particularly towards the south, abounds in busy towns and villages, of the former of which the most remarkable is *Paisley*, situated in Renfrewshire, on the banks of the small river Cart, 7 miles from the city above described. The external appearance of this town is pleasing, and the streets are in general composed of substantial buildings. It originated from an abbey founded in 1160 by Walter, the first of the Stewarts, and of which considerable remains still exist. Paisley is a noted seat of the manufacture of shawls, and also of cotton thread, gauzes, and velvets. In the town and Abbey parish, exclusive of the large village of Johnstone, there were lately three cotton spinning-mills, and seven or eight thread-mills; two steam-loom factories; six flour-mills; a calico-printing work; many bleaching-works and dye-houses; three breweries and two distilleries; several timber yards; and several iron and brass foundries; an alum and coperas work, a soap work, and a tan-yard. An idea of the present extent of manufactures, in comparison with what it was in the last age, may be obtained from the fact, that while the whole of the manufactures in 1760 amounted to £15,000, the annual computed value of the goods made in and around the town a few years ago was £2,000,000.

Paisley has been changed by the Reform Acts from a burgh of barony into a parliamentary burgh of the first class, returning one member, divided into wards for municipal purposes, and managed by sixteen councillors, including a provost, four bailies, and a treasurer. Being, though not the county town, the seat of the

sheriff court, it is adorned by a large modern castellated building, containing a jail, bridewell, and series of court-rooms; but unfortunately the edifice is placed in a low situation, without reference to salubrity or external influences. Devoted as the inhabitants of Paisley are to the pursuits of business, they have long been honourably remarkable for a spirit of inquiry and a desire for intellectual improvement. The population of Paisley, like that of Glasgow, has experienced a very rapid advance: the inhabitants of the town and surrounding parochial district, in 1821, amounted to 47,003; in 1831 to 57,466; and in 1841 to 60,487.

Notwithstanding the inland situation of Paisley, its means of communication are unusually facile and ample. The White Cart, navigable from its efflux into the Clyde to the Sneddon in the outskirts of Paisley, presents all the advantages of a canal. A canal leaves the southern suburbs of Glasgow, and passing Paisley, terminates at Johnstone. Paisley is also benefited by the Glasgow and Ayr Railway, which passes it, as well as by the other lines which centre in Glasgow.

In Renfrewshire also is situated *Greenock*, till recently the greatest seaport of the kingdom as far as customhouse receipts form a criterion, these having been, in 1834, £482,138 in gross amount. Of late, the port of Greenock has been on the decline, in consequence of the improvement of the river to Glasgow: in 1845 the gross customhouse receipts were less than £348,000; while Glasgow was £498,000; and Leith, £628,000. This town occupies a strip of sloping ground facing towards the Firth of Clyde, at the distance of 24 miles from Glasgow. In the seventeenth century it was a mere hamlet; now it is a handsome town of about 40,000 inhabitants; its population in 1841 being 36,936; containing harbours and quays of 2200 feet in extent, to which belonged, in the same year, 422 vessels, of 82,200 tonnage. It is now, moreover, by virtue of the recent Reform Acts, a parliamentary burgh of the first class, returning one member to parliament. The principal branches of commerce conducted in Greenock have reference to the East and West Indies, the United States, and British America, to which last it yearly sends out great numbers of emigrants. Sugar-baking and ship-building are other branches of industry carried on here to a great extent. The Customhouse, fronting to the Firth of Clyde, is a beautiful Grecian building, erected in 1818 at an expense of £30,000. The Tontine Hotel—situated in one of the principal streets, and containing a large public room, 12 sitting-rooms, and 30 bedrooms—was built in 1801 by 400 subscribers of £25 each, the whole expense being thus £10,000. There is also an elegant building, in the character of an Exchange, which cost £7000, and contains, besides two spacious assembly rooms, a reading-room, to which strangers are admitted gratuitously for six weeks. In Greenock there are two native banks, besides branches of several others.

James Watt, the improver of the steam-engine, was born in Greenock in 1736; and an institution for literary and scientific purposes, designed to serve as a monument to him, and termed the Watt Institution, was completed several years ago. The situation of the town, on the shore of a land-locked basin of the Firth of Clyde, with the mountains of Argyleshire and Dumbartonshire rising on the opposite side, is very fine.

Amongst Scottish towns, *Aberdeen* ranks next to Edinburgh and Glasgow. It is situated in the county named from it, on a level piece of ground between the effluxes of the rivers Dee and Don, 110 miles from Edinburgh. Its external appearance produces a favourable impression; the principal streets are straight and regular, and the buildings at once substantial and elegant, the chief material used in constructing them being a gray granite found here in great abundance. New Aberdeen, or what is now generally called Aberdeen, is close to the efflux of the Dee, the mouth of which forms its harbour; and Old Aberdeen, where the ancient Cathedral and King's College are situated, is a comparatively small town, about a mile distant, on the bank of the Don. The aggregate population, according to census 1841, was 64,767.

Aberdeen is a city of great antiquity. It became the seat of a university by the erection of King's College in Old Aberdeen in 1495; Mareschal College, in New Aberdeen, was added in 1593. By the recent Reform Acts it is a royal burgh of the first class, divided into districts for municipal purposes, and returning one member to parliament. Aberdeen is at once a seat of manufactures and a seaport. There are several houses engaged in the cotton manufacture, a few in the woollen trade, and three or four in flax-spinning and the weaving of linen. Ship-building, iron-founding, comb-making, rope-making, and paper-making are also carried on to a great extent. The fisheries of the River Dee, and the export of granite, are sources of considerable income. Of the exports for the year 1836, we may notice, as indicating at once the extent and nature of the agricultural and manufacturing products of the district, the following items:—Flax manufactures, 30,482 barrel bulk; cotton manufactures, 16,336 do.; woollen manufactures, 20,043 do.; oats, 69,289 quarters; meal, 13,375 bolls; sheep and lambs, 1407; pigs, 3034; butter, 9261 cwts.; eggs, 3120 barrel bulk; pork, 6006 cwts.; salmon, 7757 do.; granite stones, 1738 tons. The chief imports are—coal, of which there was unloaded, during the same year, 371,914 bolls; lime, cotton, flax, wool, wood, wheat, flour, salt, iron, whale-blubber, and miscellaneous goods, consisting of groceries, &c. There were in 1836 belonging to the port of Aberdeen 360 vessels, tonnage 42,080, employing 3110 men; in 1845 there were 322 sailing vessels, with a tonnage of 48,559; and 14 steamers, with a tonnage of 3951. The gross receipts of the customhouse in 1845 was £76,259.

Aberdeen is entered from the south by Union Street, an elegant double line of buildings, 1 mile in length and 70 feet wide, in the centre of which a ravine, pervaded by a rivulet, is crossed by a noble arch of 132 feet in span, upon a rise of 22. King Street, which opens up the city from the north, is 60 feet wide, and contains many splendid edifices. Besides these two main streets, there is a considerable number of modern squares and terraces. The public buildings are much scattered, but are generally of an elegant appearance. The Public Rooms, erected by the gentlemen of the counties of Banff, Aberdeen, Kincardine, and Forfar, for meetings, dancing assemblies, &c., and partly occupied as a reading-room, constitute a handsome Grecian structure, fronting to Union Street. On the north side of Castle Street stands the Town-House, and in the centre is the Cross, a curious structure re-erected in 1822, and containing sculptures of eight Scottish sovereigns between James I. and James VII. Mareschal College, formerly a plain old structure, has lately been re-edified in handsome style, chiefly at the expense of the nation. King's College consists of a handsome but ill-assorted quadrangle, surmounted by a fine tower and spire. The two colleges are attended by about 500 students, nearly equally divided between them. In Old Aberdeen are also to be seen the remains of the Cathedral, consisting of the nave of the original building, with two towers at the west end. The ceiling is composed of oak, cut out into forty-eight compartments, each displaying in strong colours the armorial bearings of some eminent person, whose name is given below in Latin, and in the old Gothic character.

Dundee, situated in Forfarshire, on the shore of the Firth of Tay, may be considered as the fourth town in Scotland, whether in population or in the importance conferred by wealth. It is a busy seaport, and the chief seat of the linen manufacture in Scotland, and indeed in Great Britain. A series of docks, the erection of which cost about £400,000, extend along the shore, where, a century ago, there was only a small quay in the form of a crooked wall. In 1845 Dundee had 44 vessels under 50 tons, giving 1599 tonnage; 265 above 50 tons, giving 46,376 tonnage; and 8 steamers of 1560 tonnage. The gross receipts at the custom-

house amounted in the same year to £42,757. In 1815 the harbour dues amounted to £4,411 only; but in 1846 they exceeded £25,000. 'In 1745,' says Mr M'Culloch, 'only 74 tons of flax were imported. From that period to 1791 the progress of the manufacture was more rapid: in the latter year 2444 tons of flax and 299 tons of hemp being imported, and about 8,000,000 yards of linen, sail-cloth, &c. exported. Previously to this period all the yarn used in the manufacture was spun upon the common hand-wheel, partly in the town, and partly in the adjacent country; but the spinning of yarn by machinery began soon after to be introduced, and the increased facility of production, consequent to the erection of flax-mills, has been such, that the cost of the yarn, including of course the raw material, is now less than the mere expense of spinning amounted to 40 years ago! In 1811, [illegible] ning-mills had been constructed in Dundee: [illegible] the number was increased to 31; and in 1846 t[illegible] were 50! The imports of flax in 1845 amounted to [illegible],860 tons; flax codilla, 9198 tons; hemp, 1200; jute, 9298. The exports in the same year were 77,000 pieces Osnaburgs; 282,000 pieces sheetings; 952 cotton bagging; 28,000 sundries; 160,000 sail-cloth; 133,000 sacking; 73 dowlas; and 30 sundries. The entire annual value of the linen goods manufactured in Dundee are estimated at £1,600,000! Besides the factories connected with the linen trade, there are several extensive machine-factories, candle-factories, sugar-refineries, and establishments for rope-making and ship-building. This great hive of industry contained in 1831 a population of 45,355, which in 1841 had increased to 62,794, of whom about one-fifth part are engaged in the linen manufacture. The town is represented in parliament by one member.

Dundee contains one handsome *place*, denominated the High Street, in the centre of the town, and several other good streets; but the most elegant and commodious private dwellings take the form of suburban villas. There is a handsome modern building, serving the purposes of an Exchange and reading-room, besides which the most conspicuous public buildings are the Town-House and a building comprehensively called the Seminaries, containing an academy and grammar-school. The High Church of Dundee was an interesting building of the thirteenth century, with a massive tower 156 feet high; but the whole structure, excepting the steeple, was destroyed by fire in January 1841; it has since been rebuilt after an equally elegant and more commodious style. Dundee is now connected by railways with all the principal towns, and through them with England. It also carries on a regular steam intercourse with London.

Perth, the chief town of the county of the same name, is celebrated on account of its elegant appearance, and the beautiful situation which it enjoys on the banks of the Tay, here a broad and majestic stream. Umbrella-cloths, ginghams, handkerchiefs, and shawls are manufactured in Perth in considerable quantities, the number of weavers employed being 1600; and there are a flax spinning-mill and an extensive bleachfield. The river being navigable to this place for small vessels, there is a harbour, chiefly for coasting trade. In 1845 there were 89 vessels belonging to the place, the tonnage of which amounted to 8828; the gross receipt of customhouse dues was £12,572. The salmon fisheries on the river are a source of considerable income: the fish are sent to London in boxes, the number of which in 1845 was 6000, amounting to 300 tons. Perth had in 1831 a population of 20,016; and in 1841, 19,293. It is represented by one member in parliament.

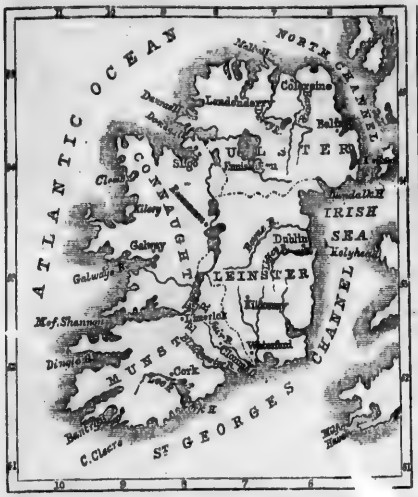
The streets of Perth are generally rectangular, and well built of stone. The river is spanned by a substantial bridge, connecting the town with a small suburb on the other side, and forming part of the great north road. The town contains most of the public buildings found in places of similar character and magnitude: the ancient Church of St John, an elegant suite of county buildings, an academy, and Town-Hall, are those most entitled to notice within the town. In the environs, besides a lunatic asylum, there is the General Penitentiary for Scotland, under the improved Prisons Act of 1841. The beauty and salubrity of Perth are much enhanced by two beautiful pieces of adjacent public ground, respectively entitled the North Inch and South Inch. In the midst of a highly cultivated vale, pervaded by a great river, and with lofty mountains in the distance, Perth, especially when its own neat appearance is considered, may be said eminently to deserve its appellation of 'the fair city.' It is now connected by railway with Dundee and the north on the one hand, and with Glasgow, Edinburgh, and the south, on the other.

Dumfries, the principal town of Dumfriesshire (71 miles from Edinburgh, and 34 from Carlisle), enjoys a beautiful situation on the Nith, which is navigable to nearly this point for small vessels. The population has varied little since 1821, being in that year 11,052; in 1831, 11,606; and in 1841, 11,069. Dumfries has a few small manufactures, but its chief importance rests in its character as a kind of provincial capital and seat of the county courts, and as an entrepôt for the transmission of cattle and pork to the English market. Eighty-four vessels belong to the port, with an aggregate tonnage of 5783; and steam-vessels sail regularly to Liverpool. The town has a neat and clean appearance, has some handsome public buildings, and is the seat of considerable refinement. In St Michael's Churchyard repose the remains of Burns, over which his admirers have reared a handsome mausoleum.

Inverness (155 miles from Edinburgh) is the principal seat of population in the northern counties of Scotland. It is an ancient royal burgh, a seaport for the export and import trade of the district, and the seat of the county courts. The situation on the river Ness, near its junction with the sea, with some picturesque eminences in the neighbourhood, is one of great beauty, and the town itself is well-built and remarkably clean. Inverness is often called the Highland capital, being within the line of the Grampians, and the residence of many persons connected with that district. In 1845 there were 144 vessels belonging to the port under 50 tons, whose tonnage was 3737; and 80 vessels above 50 tons, whose tonnage was 6431. The customhouse dues amounted in the gr[illegible] to £5082. The population of the town and parish in 1831 was 14,324; in 1841 it was 15,418. Amongst objects of interest may be enumerated—the remains of a fort built by Cromwell; Craig-Phadric, an eminence crowned by a vitrified fort; and the moor of Culloden (distant 5 miles), the scene of the fatal battle which extinguished the hopes of the House of Stuart.

The principal towns in Scotland, next to those above enumerated, are—in Ayrshire, *Kilmarnock*, a prosperous seat of the coarser woollen manufacture—population in 1841, 19,956; *Ayr*, the capital of the county, a thriving market-town, and in a small degree a seaport—population, 8264; in Stirlingshire, *Stirling*, the county town, remarkable chiefly for its castle, a favourite seat of the Scottish monarchs, and from which the most splendid views are commanded—population, 9095; *Falkirk*, a busy market-town, and the centre of a district remarkable for its iron-foundries, particularly the celebrated one of Carron—population, 15,621; in Fifeshire, *Dunfermline*, the principal seat of the manufacture of damasks, diapers, and similar fabrics, and an ancient seat of royalty, celebrated for the remains of its Abbey, which contain the tomb of King Robert the Bruce—population, 20,217; *Cupar*, the county town—population, 6400; *Kirkaldy*, a busy manufacturing and seaport town—with a population (including suburbs), of 18,000, and a commercial shipping amounting to 10,000 tons burthen; *St Andrews*, the seat of an ancient university: in Forfarshire, *Montrose* and *Arbroath*, active seats of the linen trade, celebrated for their pavement quarries, and likewise seaports—the former having a population of 15,000, and a tonnage of 15,200, the latter a population of 8700, and a tonnage of 6500: in Morayshire, *Elgin*, a royal burgh and county town.

IRELAND.



This large and important member of the British Isles is washed on the south, west, and north by the waters of the Atlantic, and on the east by a strait—called at different places the North Channel, the Irish Sea, and St George's Channel—which separates it from the larger island of Great Britain. The width of this strait is variable, being about 47 miles between St David's Head in Wales and Carnsore Point in Ireland, about 55 between Holyhead and Dublin, and only 13½ between the Mull of Cantire and the opposite point of Fairhead. More compact in form than Great Britain, Ireland is, nevertheless, indented by a number of bays and estuaries, which give it an irregular coast-line of not less than 2200 miles. It lies between lat. 51° 25′ and 55° 23′ north, and between long. 5° 28′ and 10° 35′ west. Its greatest length, from Crowhead on the south-west to Fairhead on the north-east, is 306 miles, but on any meridian not more than 235; its greatest breadth, between the extreme points of Mayo and Down, 182 miles; its least, between Galway Bay and Dublin, 110. Its entire area is estimated at 31,874 square miles, or about 20,808,271 statute acres. Of this area, about 13,000,000 acres are under cultivation, such as it is; 6,200,000 uncultivated; 375,000 in plantations; and 631,000 of water. Of the 6,200,000 uncultivated acres, not more than 2,500,000 are unsusceptible of improvement; the rest might be improved either for pasture or for tillage.

SUPERFICIAL FEATURES.

In superficial character, Ireland may be considered as an undulating or hilly country—less rugged than the Highlands of Scotland, and not so tame as the eastern section of England. Its hills are generally more rounded than abrupt, and lie in detached clusters rather than in chains or ranges. One of the best defined ranges is the *Slieve Bloom*, occupying a somewhat central position, and running in a southerly direction between King's and Queen's Counties through the north of Tipperary. In this range, the highest point of which is 1690 feet, the rivers Barrow, Nore, and Suir, commonly called the 'Three Sisters,' take their rise. The *Mourne* mountains, a small, but well-defined range, occupying the southern angle of Down, have a culminating point in Slieve Donard, 2809 feet above the sea. It may be here observed that wherever the Irish term *slieve* is applied to a mountain, it expresses that that mountain forms part of a range. From Dublin Bay southward through Wicklow, there is an irregular range, whose extreme height is 3039 feet, descending in the lateral branch of the *Croghans* to 2060 feet. In the northern and western parts of the island, several irregular clusters occasion considerable diversity of surface; and in the south, the country is decidedly hilly, the ranges running somewhat parallel, but attaining to no great elevation unless around Killarney, where *Macgillicuddy Reeks* rise in Gurrane Tual to 3405 feet, being the highest point in Ireland.

The flat or level portions of the island, with the exception of some fine tracts of fertile valley-land in Kilkenny, Tipperary, and Limerick, consist mainly of *bog* or morass, which occupy, according to Dr Kane, 2,830,000 acres, or about a sixth part of the entire superficies. The largest of these morasses is the Bog of Allen, which stretches in a vast plain across the centre of the island, or over a large portion of Kildare, Carlow, King's and Queen's Counties—having a summit elevation of 280 feet, in which the Boyne and some lesser rivers take their rise. Along the banks of the river Inny—which, rising in Lough Iron, in county Westmeath, crosses Longford, and falls into the Shannon—are large tracts of deep, wet bog, only exceeded in dreariness by that which for miles skirts the Shannon in its course through Longford, Roscommon, and King's County. These bogs consist of turf or peat in various degrees of condensation—from a pulpy or fibrous mass, to a compact mass that admits of being cut into any form. They rest on a substratum of clay and limestone gravel, are from 15 to 40 feet in depth, and are composed chiefly of aquatic vegetables, which have grown on the sites where they are now entombed.

It is worthy of remark, that notwithstanding the quantity of water contained in these extensive bogs, there arises from them no miasma injurious to health. This is attributable to the large portion of tannin they contain, which possesses so strong an antiseptic quality, that bodies plunged into a deep bog remain undecayed, the flesh becoming like that of an Egyptian mummy. It sometimes happens that a bog, overcharged with water during a rainy season, breaks through the obstruction which the drained and more solid part affords, and, rushing forward, overflows large portions of good land. This occurred in the year 1821, when the Bog of Clara, in the county of Westmeath, suddenly burst into the valley of the River Brusna, and totally destroyed many hundred acres of excellent land: a similar occurrence took place, to a large extent, a very few years since in the county of Antrim.

GEOLOGICAL STRUCTURE.

The rock formations of Ireland commence with the primary schists and slates, and terminate, generally speaking, with the coal-measures. The igneous rocks are granites, greenstones, traps, and columnar basalt, which is displayed in unparalleled symmetry at the Giants' Causeway in Antrim. The primary rocks—namely, mica-slate, quartz, marble, serpentine, clay-slate, &c.—form a broad rugged fringe all around the island, making the interior a sort of basin, in which successively appear the old red sandstone, carboniferous limestone, and superimposed coal-measures. Breaking through the primaries, and occupying a considerable portion of the surface, are the granites and greenstones; trap and tabular greenstone more commonly disrupt the secondary rocks; and the basalt of the Giants'

Causeway is said to be associated with traces of the chalk or upper secondary groups. Ireland presents no well-developed tertiaries, but exhibits instead a magnificent display of superficial accumulation in her bogs, and in those curious ridges of limestone-gravel and clay, locally known as *escars*, which probably originated at a period when the country was partially submerged, from eddies and counter-currents caused by inequalities of the surface. One of the most remarkable geological features of the island is the development of the carboniferous limestone, which forms the surface-rock of nearly two-thirds of the country, thus contributing to the fertility of the soil, and, in conjunction with a moist and temperate climate, conferring upon the vegetation its proverbial verdure. The appellations, 'Emerald Isle' and 'Green Isle of the Ocean,' are names sung by its poets, and repeated with affection by its natives in all quarters of the world.

The available minerals are—granite of excellent quality, as that quarried to the south of Dublin; roofing-slate, as that of Killaloe and Valentia in Kerry; limestone in inexhaustible supplies; excellent marble, as the mottled of Fermanagh, the green of Galway, and the black of Kilkenny; building-stones of various sorts; coal (both anthracite and bituminous), which is worked in Carlow, Kilkenny, Donegal, Limerick, Tyrone, &c.; potters' clay and fullers' earth; and a few of the precious stones. The principal metals are copper and lead, found in Cork, Kerry, Wicklow, &c.; iron in inconsiderable quantities; gold and silver, which were once, and, we believe, are still sought after in Wicklow; a little antimony and manganese. Before concluding this brief survey of the geology of Ireland, it may not be irrelevant to state with Mr M'Culloch, that 'Dublin, Belfast, and the factories in the north, are mostly supplied with coal from England, at about 10s. or 12s. per ton, and that such also is the case in most parts of the country where coal is used. The great mass of the Irish people will probably be for many ages dependent on the neighbouring peat-bogs for fuel.'

HYDROGRAPHY, &c.

The *bays* and *loughs* which indent the island are numerous, and of considerable importance to commerce. On the east the following are worthy of notice:—Belfast Lough, a large indentation, about 13 miles in length, and from 6 to 8 wide, of easy access, affords good anchorage, but shoals towards its extremity, so that vessels can only reach Belfast with the flood; Strangford Harbour, about 15 miles in length, and from 5 to 6 in width, with a narrow dangerous entrance; Carlingford Lough, about 11 miles in length, and 2 wide, but obstructed by a shallow bar; Dundalk Bay, a large shallow basin of little navigable value; Dublin Bay, of considerable size, and converted, as it were, into a dock by long piers projecting from both sides of its fair-way, with a view to remove the sandbanks with which it is encumbered; and Wexford Harbour, a spacious inland basin of irregular form, and almost land-locked, but obstructed also by a shallow bar. On the south are Waterford Harbour, or the estuary of the Barrow, Nore, and Suir, curving inland with deep water, and admitting vessels of large tonnage to Waterford, which is 15 miles from the sea; Dungarvon and Youghal Harbours, both of minor importance; the fine harbour of Cork, with its deep narrow entrance, and capacious basin studded with islands, yet capable of accommodating the whole navy of England; and Kinsale Harbour, also a safe and commodious retreat. On the south-west angle are the large bays of Dingle, Kenmare, Bantry, Dunmanus, and Crookhaven, all of easy access, and affording excellent anchorage. On the west coast are Tralee Bay, a somewhat dangerous basin; the large and commodious estuary of the Shannon, full 70 miles long from its entrance between Louphead and Kerryhead to Limerick, which can be reached by vessels of 300 and 400 tons; Galway Bay, Clew Bay, Blacksod, Killala, and Sligo, all capacious and deep-water inlets; and Donegal Bay, an extensive arm, with several minor creeks and harbours, none of which are of much importance, with the exception of Killybegs. On the north coast are Lough Swilly, a long, deep, irregular gulf, projecting inland for 25 miles; and Lough Foyle, a large, oval, but somewhat shallow basin, about 15 miles long and 9 wide, with an entrance scarcely a mile across.

The *promontories* of the island are generally bold and well defined; several of them being celebrated sailing marks, and the sites of lighthouses. The more prominent on the east coast are St John's Point, Dunany Point, the Heads of Clogher, Howth, and Wicklow, and the Points of Cahore, Greenore, and Carnsore. On the south are Hook Tower, the headlands of Ardmore and Kinsale, the celebrated Cape Clear, and Mizen Head. On the west are Crow Head, Dunmore Head, Loophead and Kerryhead, guarding the entrance of the Shannon, Slyneheadwith its two lighthouses, and the headlands of Achil, Urris, and Tillen. On the north, Bloody Foreland; Malin Head, the most northerly point in the island; Giants' Causeway, with its picturesque pavement, steps, and columns; Bengore Head; and Fairhead, rising 630 feet above the sea, with its irregular courses and columns of tabular basalt.

The *islands* are, generally speaking, small, and of little importance. On the east the largest is Lambay, about 2½ miles off the coast of Dublin, and 'remarkable for its abundance of rabbits, sea-fowl, oysters, crabs, and lobsters.' On the south are Clear Island, with a rough uneven surface of 2000 acres; Tuscar Rock, about 8 miles off Carnsore Point, a dangerous ridge rising 20 feet above the sea, and surmounted by a lighthouse after the model of the Eddystone; the Saltees, another dangerous ledge, also about 8 miles from the inland, and indicated by a floating light. On the west are the Skelligs, a small rocky group, frequented by the gannet; Valentia, a large fertile island of 9600 acres; the Blasquets, the favourite resort of the bird called the gourdet; the three isles of Arran, containing an aggregate area of 6823 acres; Innisbofin, Innisturk, and Clare, considerable islands in Clew Bay; Achil or 'Eagle' Island, containing about 23,000 acres, and rising to a height of 1530 feet; the small islets of Inniskea, and the curious irregular *peninsula* called the Mullet. Off the Connaught coast, and extending beyond these islands, are extensive banks, frequented by immense shoals of cod, ling, and other fish. On the north are Aranmore, with an area of 2000 acres; Tory, celebrated for its fertility; and the basaltic island of Rathlin, containing upwards of 3300 acres, and yielding average pasture and crops, and at one time considerable quantities of kelp.

The principal *rivers* are the Foyle and Bann, which flow into the North Channel; the Boyne, Liffey, and Slaney, which empty themselves into the Irish Channel; the Barrow and Nore, which, falling into the Suir, pour their united streams into the bay of Waterford; the Blackwater, running into Youghal Harbour; the Lee, discharging its waters into the harbour of Cork; and the Shannon, with its principal affluents Boyle, Inny, Suck, Brusna, and Maig. None of these rivers are naturally of importance to navigation. The Shannon, however, has been made navigable to Lough Allen by means of locks and lateral cuts; the Barrow by similar means to Athy; the Foyle by canal to Strabane; the Suir is naturally navigable to Clonmel for barges; and several of the others have been artificially united by such lines as the Lagan, Newry, Ulster, Royal, Grand, Athy, and other canals—which now intersect a considerable portion of the island.

There are a number of *mineral springs* in the island, chiefly sulphureous and chalybeate. Those of any note are Mallow in Cork, resembling those of Bristol; Ballynahinch in Down; Swadlinbar in Cavan, Castleconnel, near Limerick; Goldenbridge and Lucan in Dublin.

The *lakes* of Ireland, as might be expected from the superficial character of the country, are both numerous and extensive—covering in the aggregate an area of 455,400 acres. The largest is Lough Neagh in Ulster, its length being about 20 miles, and its breadth from

10 to 12 miles—covering an area of 100,000 acres; it is of considerable depth, navigable, and its surface only 48 feet above sea-level. Erne, also in Ulster, consists properly of two sheets, occupying an area of 40,000 acres. Both are studded with islets, and lay claim to some share of picturesque beauty. Lough Derg, a small sheet in the same province, contains some islets, in one of which is situated St Patrick's Purgatory—a narrow cave, which has long been a noted place of pilgrimage. In Connaught are the large irregular expanses Conn, Mask, and Corrib, remarkable as being respectively 30, 21, and 16 feet above sea-level. The principal lakes in the course of the Shannon are Allen, Ree, and Derg; the first 160 feet, and the last 98 feet above ordinary sea-level. The lakes of Killarney, like those of Cumberland, are more celebrated for their picturesque beauty than for their extent. They consist of three connected sheets, lying in the bosom of the Kerry mountains; are thickly studded with islands, present outlines the most irregular, and surrounding scenery of the most opposite and diversified character.

CLIMATE.

The *climate* of Ireland is remarkable for its mildness and humidity—results arising, in the first place, from its being surrounded by the Atlantic, from which no portion of its interior is distant more than 50 miles; and in the second, from the comparatively small elevation which the generality of its land attains. This mildness is proved by the fact, that even in the northern county of Donegal, the arbutus, laurustinus, agapanthus, and fuchsia grow healthily in the open air, and myrtles so luxuriantly as to cover the walls of houses up to the second storey. Its humidity, though great, differs considerably in different districts, the south-west and west receiving, on an average, 42 inches of rain annually; while in Armagh, for example, there falls little more than half that amount.

The prevailing winds are the west and south-west; indeed winds from a westerly direction blow for nearly three-fourths of the year. These, tempered by the warm currents of the Atlantic, and surcharged with its vapours, produce mild, but extremely variable seasons along the south and west; and though snow seldom lies, even on the highest hills, and verdure is everywhere promoted, yet an early wet autumn often obstructs the harvest, and thus renders winter, properly so called, longer than in England. Difference of latitude has its usual effect, though somewhat less perceptible. Thus in the southern counties spring is earlier, fruit ripens a fortnight sooner, and the harvest is fit for the sickle a month before that of the northern, and about a fortnight before that of the midland districts.

BOTANY AND ZOOLOGY.

The native *Flora* and *Fauna* of Ireland generally resemble those of the neighbouring island; the cultivated plants and domesticated animals are identical. There are, however, some species peculiar to the island, of which the following are the most remarkable:—The strawberry-tree, found at Killarney, particularly beautiful from its abundance of red fruit; the Irish rose, found near Belfast; the Irish furze, found sparingly in Down, distinguished from common furze by its upright mode of growth and softer texture; the Irish or Florencourt yew, of upright growth and dark-green foliage, resembling that of the cypress; the Irish menziesia, whose large purple heath-like bells decorate the wild districts of Galway; the Corsican and other species of heaths, found also in Spain and the islands of the Mediterranean; and carigeen or Irish moss—a sea-weed of some commercial importance.

At present, Ireland is not entitled to the character of a well-wooded country—a defect which is fast being remedied by extensive plantations; but we have historical evidence, as well as the indubitable records of her bogs, that at no very remote period large tracts were covered with a gigantic growth of the ordinary forest-trees. Morrison (1596) and Davis (1605) mention the forests in which the poor Irish took refuge; and all the scenery of Spenser's 'Faëry Queen' is drawn from the River Bandon, which he celebrates as the 'pleasant Bandon, wood y-crowned,' as it is to this day. Boate, in his 'Natural History,' mentions the great extent of wood then standing; but not long did it so stand, for wherever Cromwell's army came, the forests were felled and the country laid bare. There are still, however, in a few favoured spots, some remains of the ancient oak and ash woods, as at Killarney, at Glengariffe near Bantry, in Connemara, in some spots of the county of Wicklow, and in Donegal, near the beautiful, but little Lough Van, where a few red deer are still to be seen. The plantations in Ireland, in 1841, were thus estimated in acreable extent:—Oak, 29,536 acres; ash, 6042; elm, 1417; beech, 3274; fir, 25,289; mixed, 280,096—making a total of 345,604 acres.

With respect to the animal kingdom, the elk has passed away, leaving its skeleton and antlers in the bogs as memorials of its gigantic size; the wolf has disappeared since the time of the Commonwealth; the wolf-dog is still to be met with, though rarely; the red-deer frequents the wild mountain districts of Kerry; the eagle inhabits the western coast of Connaught; the Irish falcon of our ancestors is, we believe, extinct; the gourdet claims the Blasquets as his own peculiar residence; and the gillaroo and dorchar trouts are limited to Lough Neagh. Of the domesticated animals, though these are now generally cross-breeds, Ireland possesses some varieties regarded as peculiar—namely, the Irish black horse, the Kerry and old Irish breeds of the ox, a worthless wiry-wooled sheep, and a long-legged narrow-bodied pig (See from Nos. 37 to 40 inclusive). In consequence, it is presumed, of the humidity of the soil and climate, the adder and snake are unknown, as is also the mole; but, contrary to the vulgar notion, frogs and toads are by no means uncommon.

PEOPLE—POPULATION.

The bulk of the Irish people are a branch of the Celtic race, who were probably the first settlers in the island. The peasantry throughout nearly the whole country are of this origin, and in many parts they still speak the Celtic (here termed the Irish) language. The chief exception from this rule is in the north, where a great number of the humbler, as well as middle-classes, are descended from comparatively recent settlers of Scottish extraction. Another rather conspicuous exception is found in Connaught, particularly in Galway, where a considerable number of the people seem to be of Spanish descent. Families of English extraction are comparatively rare amongst the labouring-class in Ireland; but a large portion of the upper and middle-classes are of Saxon descent, and differ little from the same ranks in Great Britain.

Limiting the consideration of the social state of Ireland to what is peculiar to it, we may first advert to a conspicuous practice of the landowners—*absenteeism*. By absentees are not meant those noblemen who, being Englishmen, have also large possessions in this country, and whose estates (with some glaring exceptions) are usually well and justly managed; but those sons of Erin who prefer living in any other country to remaining in their own, although it is at home only that a man receives his just meed of respect. This system of absenteeism has led to that of *middlemen*, who hold large tracts of land from the head landlord, and relet this land at a much increased rent to farmers; these, again, set to a third set of under-tenants at rack-rents; and this lowest grade of tenantry divide their small farms among their sons; thus creating a race of farming poor, who are unable to till their holdings properly, and miserably increasing a population raised but a step above the pauper. There is perhaps no more thriving person than the *farming-landholder*, who, contented with his condition, rises with his labourers, holds his own plough, and superintends the management of his farm; but the state of the *cottier* is often far from being a happy one. The discomfort of this class may be said

to arise chiefly from three causes—low wages, high rents, and, most of all, from the want of steady employment. The too great subdivision of land, as will be shown in treating of the condition of the peasantry in the provinces, is another cause of the general poverty and want of comfort of the cottier. Under the excitement of war prices and the free trade in corn with Great Britain, agriculture advanced rapidly, and consequently so did the demand for labour; land rose in value, lessees were tempted to realise profit-rents by subletting their farms; and thus the land was let in still smaller divisions and at extreme rents. This system was an absolute bar to the encouragement which might have been given to the tenantry by the proprietors of estates. The occupying landlord pays a higher rent to the middleman than does the middleman to the proprietor, because the middleman exacts as much as he can get, without any reference to the future situation of the tenant: but the landlord has different feelings—he looks forward, and considers the reversionary interest which he has in keeping his tenant in prosperity, and his land in a state to yield a remunerating profit.

The habits of getting credit frequently at an advance of 50 per cent., of resorting to pawnbrokers, and of forming early marriages, contribute to the impoverishment of the labouring-classes in Ireland. The poorer the individuals are, the more eager are they for wedlock; even the very beggars, and their name is legion, intermarry. It must, however, be admitted as some excuse, that early marriage is much encouraged by the Romish priesthood; and in fairness it must be added, that this practice contributes exceedingly to the morality of the lower classes. The superstitious regard to *wakes* and funerals, which has been handed down from ancient times, is often a deplorable drain on the slender resources of the peasant.

In considering the character of the Irish peasantry in general, it is refreshing to see some noble traits standing out in full relief against the darker shades. The Irish people are of acknowledged bravery, proverbial hospitality, affectionate to their parents and aged relatives, and charitable to the mendicant, if that, in the present social state of their country, can be considered a virtue. The women, generally speaking, are modest and irreproachable in their conduct; and it must be added, that notwithstanding the crime and wretchedness which oppress the country, the poor Irish are free from some species of vice which are but too common in other countries. During the hay and corn harvests of England and Scotland, the services of the Irish labourers are very important. They are generally sober, well-conducted, and inoffensive; labouring hard and living hard, that they may bring their earnings home to pay the rent of their little farm or dwelling. A *spalpeen*, or harvest-man, carries home from four to eight or ten pounds; to do which he is contented, while away, almost to starve himself. There is reason, therefore, to hope that, under a better state of things, the national character would rise to a standard much higher than it has yet attained; and improvement may reasonably be expected from the legislative efforts now in course of development.

The last, but by no means most miserable class in Ireland, is that of the common *vagrant*. Of these, some are beggars by profession; some are obliged, from loss of employment, to become what are called *walkers*; and others are mendicants for a time only, as when their husbands are reaping the harvests in England, at which time it is customary to lock up the house, and the wife and children *walk the world* until the traveller returns with his little hoard of hard-earned money. It may be asserted that in every district of Ireland, excepting some peculiarly-circumstanced portions of Ulster, there is a feeling of respect towards mendicancy, which tends to support and perpetuate it. The poor tenants of the cabins receive the wanderers, whether single or in groups; and carrying, as these do, their bedding along with them, a warm corner is allowed them even in the only room possessed. 'It is the humblest sort,' say they, 'that are really good to us.' The vagrants that frequent fairs, markets, patrons, holy wells, and other places of religious or pleasurable resort, are better off than the other poor. A respectable evidence declared to the commissioners on the Poor-Law Inquiry in the county of Meath, that the beggars at fairs were 'as jolly a set as ever he saw in his life;' and in more places than one, it was stated to the commissioners that the beggars were better off than the tradesmen or labourers.

Hitherto, the usual methods of supporting the pauper poor have been congregational collections, subscriptions, very extensive private charity, and of late years the application of the resources of the Mendicity Association; but the inefficiency of these means has ultimately led to the establishment of a *Poor-Law*, the general object of which is to relieve the destitution of the country. (See No. 62, p. 192.) It appears that so far as the poor-law system is as yet brought into operation, it is imperfect, and has not relieved the districts in which it has been carried into effect from the annoyance of mendicity, inasmuch as there is no compulsory law for retaining vagrants in the poorhouses; they therefore leave them at pleasure, to follow the more agreeable course of begging in the streets. Until such enactment be passed, or begging be declared an offence, Ireland, it would seem, will be subject to a severe taxation in support of the poor-law system, while at the same time it is not relieved of the evils of mendicancy.

The population of Ireland was estimated by an acute statesman of the reign of Charles II. as being then about 1,100,000. Another estimate formed in 1731, but upon data not perfectly to be relied on, made the population 2,010,221. This last number seems to have been doubled before 1788, till which time Ireland was almost exclusively a pastoral country. Since then, agriculture and commerce have borne more conspicuous parts in the national industry; but circumstances unfavourable to national happiness and wealth have also been strongly operative, and the progress of the people was, till a very late date, upon the whole downward. In proportion to the unfavourable circumstances, and most of all where the circumstances have been the most unfavourable, the population has increased. It was at the first regular census in 1821, 6,801,827; at that of 1831, 7,767,401; and at that of 1841, 8,175,124.

NATIONAL INDUSTRY—COMMERCE.

The national industry of Ireland, considering her fertile soil, her maritime, mineral, and other resources, is vastly inferior to what, under proper management, it ought to be. Her *agriculture* and *husbandry*, with a few exceptions, are wretched in the extreme; and yet, notwithstanding, large quantities of grain, cattle, pigs, butter, ham, and eggs, are annually exported to the markets of Great Britain. Potatoes, until the almost universal blights of 1846–7–8, have been the principal crop; oats next in order; barley and wheat but sparingly; flax in considerable quantities; turnips, beet, and other green crops are only as yet coming into culture. The same remarks are applicable to her *fisheries*, which are neglected in an unaccountable manner. The surrounding seas swarm with cod, ling, hake, herrings, pilchards, sprats, &c.; and yet the main supply of salt-fish is obtained from Scotland. Eels and salmon frequent most of the rivers, and are caught in considerable quantities, the northern rivers furnishing part of the supply in the English markets.

'Ireland,' says Mr M'Culloch, 'is not, and never has been, a *manufacturing* country. Its unsettled, turbulent state, and the general dependence of the population on land, have hitherto formed insuperable obstacles to the formation of great manufacturing establishments in most parts of the country; whilst the want of coal, capital, and skilful workmen, and the great ascendancy of England and Scotland in all departments of manufacture, will, there is reason to think, hinder Ireland from ever attaining eminence in this department.' Linen may be regarded as the staple

manufacture, of which Belfast and the surrounding districts of Ulster are the chief seats. The yarn is for the most part spun by machinery, hand-spinning being all but abandoned; but a great proportion of the cloth is still produced by the handloom. The annual value of the linen now exported from Ireland is estimated at £4,000,000. The manufacture of woollen stuffs is limited to a few localities, as Dublin, Montmellick and Abbeyleix in Queen's County, and to Kilkenny—employing in all perhaps not a thousand individuals. The silk trade of Ireland is all but extinct, being restricted to the production of tabinet or poplin; but the cotton trade, carried on chiefly at Belfast, and at Portlaw in Waterford, seems to be on the increase. *Distillation*, at one time so prevalent, was reduced through the exertions of Father Mathew, from 12,296,342 in 1838, to 5,290,550 gallons in 1842; but has since shown some symptoms of increase.

The *commerce* of Ireland consists chiefly of the Channel trade with Great Britain, which annually employs about 16,800 vessels, with a burthen of 1,673,000 tons. In 1845, Ireland possessed 79 steam-vessels, with a tonnage of 18,069. On the subject of the Channel trade, which has greatly increased since the Union, Mr Porter has the following interesting remarks:—

The value of produce and merchandise that have been the objects of trade between Great Britain and Ireland, in various years since the Union, has been stated in papers laid before Parliament as follows:—

	Imports into Ireland from Great Britain.	Exports from Ireland to Great Britain.
1801,	£3,270,350	£3,537,725
1805,	4,067,717	4,288,167
1809,	5,316,557	4,588,395
1813,	6,746,353	5,410,396
1817,	4,722,766	5,696,613
1821,	5,338,838	7,117,452
1825,	7,048,936	8,531,355

No account of this trade can be given for any year subsequent to 1825, the commercial intercourse between Great Britain and Ireland having at the end of that year been assimilated by law to the coasting traffic carried on between the different ports of England; and, with the exception of the single article of grain (as to which it was considered desirable by the legislature to continue the record), we have now no official register of the quantity or value of goods or produce received from or sent to Ireland. That this traffic has greatly increased in all its branches there can be no doubt; and this increase may partly be attributed to the abolition of the restrictions that existed up to 1825, but probably still more to the employment of steam-vessels upon an extensive scale. To show the extent to which the traffic has been carried by this means, a statement was furnished to a committee of the House of Commons by the manager of a company trading with steam-vessels between Ireland and Liverpool, of the quantity and value of agricultural produce imported into that one port from Ireland in 1831 and 1832. From this statement it appears that the annual value of the trade was about £4,500,000, which was in great part made up of articles that could not have been so profitably brought to England by any previously-existing mode of conveyance—such as live-cattle, horses, sheep, and pigs; the value of which amounted in 1831 to £1,760,000, and in 1832 to £1,430,000. During the same two years the value of Irish agricultural produce brought to the port of Bristol averaged about £1,000,000 sterling. The whole number of cattle, horses, sheep, and pigs, sent from Ireland to the various ports of England and Scotland, in different years from 1801 to 1825, was as follows:—

	1801	1805	1809	1813	1817	1821	1825
Cattle,	31,543	21,862	17,917	48,973	45,301	26,725	63,519
Horses,	669	4,114	5,264	5,904	848	2,392	3,130
Sheep,	2,879	10,988	7,573	7,598	29,460	25,310	72,161
Pigs,	1,968	6,383	4,712	14,221	24,195	104,501	65,919

The numbers sent to Liverpool and Bristol alone, in 1831 and 1832, were—

	Liverpool.		Bristol.	
	1831	1832	1831	1832
Cattle,	91,911	71,318	6,978	4,977
Horses and Mules,	539	708	159	196
Sheep,	160,487	96,337	11,640	4,446
Pigs,	156,001	149,090	84,197	85,619

The statement above-mentioned of the imports into Liverpool occasioned considerable surprise at the time it was made, from the greatness of its amount; but it would appear that this branch of trade has since gone on increasing in a most extraordinary degree, as will be seen from the following account of the number and value of live animals brought from Ireland to Liverpool in the year 1837:—

84,710 Black Cattle, at 16*s.* each,		£1,355,360
316 Calves,	45*s.*	711
223,050 Sheep,	40*s.*	450,100
24,689 Lambs,	18*s.*	22,208
595,422 Pigs,	50*s.*	1,488,555
3,414 Horses,	20*l.*	68,280
319 Mules,	8*l.*	2,552
Total value,		£3,397,760

The average value here assigned to the several kinds of animals, is given on the authority of an intelligent gentleman resident at Liverpool, and who is practically acquainted with the trade.

The value in money, of one seemingly unimportant article, eggs, taken in the course of the year to the above two ports from Ireland, amounts to at least £100,000. The progress of this trade affords a curious illustration of the advantage of commercial facilities in stimulating production and equalising prices. Before the establishment of steam-vessels, the market at Cork was most irregularly supplied with eggs from the surrounding district; at certain seasons they were exceedingly abundant and cheap, but these seasons were sure to be followed by periods of scarcity and high prices, and at times it is said to have been difficult to purchase eggs at any price in the market. At the first opening of the improved channel for conveyance to England, the residents at Cork had to complain of the constant high price of this and other articles of farm-produce; but as a more extensive market was now permanently open to them, the farmers gave their attention to the rearing and keeping of poultry, and, at the present time, eggs are procurable at all seasons in the market at Cork; not, it is true, at the extremely low rate at which they could formerly be sometimes bought, but still at much less than the mean average price for the whole year. A similar result has followed the introduction of this great improvement in regard to the supply and cost of various other articles of produce. In the apparently unimportant article feathers, it may be stated, on the respectable authority above quoted, that the yearly importation into England from Ireland reaches the amount of £500,000.

In the absence of all further customhouse records, the following table of the number and tonnage of vessels in which the trading intercourse with Ireland has been carried on during the first thirty-seven years of the present century, will afford a pretty correct view of its amount and progress. If we compare the tonnage employed in 1801 with that of 1836, we shall find that they bear the proportion of 257 to 100, thus showing an increase of not less than 157 per cent. It will further be seen that this increase has been much more rapid during the last ten years in which steam-vessels have been so much brought into use, than it was in the preceding years of the series. Up to 1826, the increase from 1801 was no more than 62 per cent., showing a mean annual increase of 2⅔ per cent.; whereas, in the ten years following 1826, the increase has been as much as 95 per cent., or 9½ per cent. annually:—

Years.	Inwards.		Outwards.	
	Ships.	Tons.	Ships.	Tons.
1801	5,360	436,026	6,316	532,033
1802	5,890	461,278	5,540	449,350
1803	5,796	504,864	5,636	502,279
1804	5,643	490,455	6,148	557,279
1805	6,366	566,790	6,875	598,720
1806	6,967	579,297	7,032	588,720
1807	No returns can be procured for this year.			
1808	6,477	768,264	7,560	696,473
1809	7,041	660,808	7,011	580,887
1810	8,408	713,067	9,121	763,488
1811	9,014	769,097	8,216	703,738
1812	10,812	925,738	10,053	867,342
1813	8,560	716,851	9,096	778,286
1814	7,562	613,898	8,719	715,171
1815	8,462	680,338	9,602	776,812
1816	7,575	621,275	8,861	721,772
1817	9,186	770,547	9,530	762,770
1818	7,969	644,896	8,868	763,622
1819	8,575	699,885	9,751	795,498
1820	9,229	783,750	8,451	734,716
1821	9,440	819,648	9,266	801,007
1822	9,582	832,927	9,935	858,114
1823	9,398	786,637	9,937	814,383
1824	7,534	615,896	10,969	905,449
1825	8,922	741,182	10,981	922,555
1826	8,388	632,972	11,599	1,055,870
1827	7,411	737,752	11,083	1,044,093
1828	8,790	923,505	12,339	1,167,280
1829	8,922	906,158	13,478	1,286,168
1830	8,455	880,965	13,144	1,245,647
1831	9,029	921,122	13,158	1,246,749
1832	9,705	1,026,613	14,694	1,417,538
1833	9,478	1,041,882	14,227	1,378,556
1834	10,026	1,100,389	14,560	1,440,617
1835	10,116	1,138,147	14,608	1,473,225
1836	9,890	1,179,062	14,725	1,490,788
1837	10,299	1,202,104	16,347	1,685,694

GOVERNMENT—ADMINISTRATION.

The government of the country, since the Union in 1801, is identical with that of Great Britain. It is represented in the imperial parliament by 32 members of the House of Lords, and 103 of the House of Commons. The executive government is invested in a Lord-Lieutenant, assisted by a Privy-Council and chief secretary; and the law is administered by a Lord Chancellor, a Master of the Rolls, and twelve judges of the Supreme Courts of Queen's Bench, Common Pleas, and Exchequer. County, peace, and municipal matters are conducted much in the same way as in England, with the exception of an armed national police-force of from 7000 to 8000 men.

For civil and other purposes, the island is divided into 4 provinces—Ulster, Leinster, Munster, and Connaught—which are subdivided into 32 counties, and these again into baronies, hundreds, and other minor sections. Judicially, there are 6 circuits; and ecclesiastically, 2 archbishoprics, 10 bishoprics, and 2532 parishes, consolidated into 1385 benefices. The following table exhibits the counties arranged alphabetically, their area in statute acres, their population according to the last census, and their capital or county towns:—

Counties.	Acres.	Population.	County Towns.
Antrim,	761,877	360,875	Carrickfergus.
Armagh,	328,076	232,353	Armagh.
Carlow,	221,342	86,228	Carlow.
Cavan,	477,360	243,158	Cavan.
Clare,	837,994	286,394	Ennis.
Cork,	1,846,833	854,118	Cork.
Donegal,	1,193,443	296,448	Lifford.
Down,	612,495	361,446	Downpatrick.
Dublin,	226,414	372,773	DUBLIN.
Fermanagh,	457,195	156,481	Enniskillen.
Galway,	1,566,354	440,198	Galway.
Kerry,	1,186,126	293,820	Tralee.
Kildare,	418,436	114,488	Kildare.
Kilkenny,	509,732	202,420	Kilkenny.
King's,	493,985	146,857	Tullamore.
Leitrim,	392,363	155,297	Carrick-on-Shannon.
Limerick,	680,843	330,019	Limerick.
Londonderry,	518,595	215,174	Londonderry.
Longford,	289,409	115,491	Longford.
Louth,	201,906	196,940	Dundalk.
Mayo,	1,363,892	388,887	Castlebar.
Meath,	579,899	183,898	Trim.
Monaghan,	319,757	200,442	Monaghan.
Queen's,	424,854	153,990	Maryborough.
Roscommon,	607,691	253,591	Roscommon.
Sligo,	461,753	180,886	Sligo.
Tipperary,	1,061,731	435,553	Clonmel.
Tyrone,	806,640	312,998	Omagh.
Waterford,	441,553	196,187	Waterford.
Westmeath,	453,468	141,300	Mullingar.
Wexford,	576,386	202,933	Wexford.
Wicklow,	800,178	128,145	Wicklow.
Total,	20,808,271	8,175,124	

Note.—Etymologists are at variance as to the origin of the word Ireland; some contending that the words *Erin*, *Ireno*, &c. signify *sacred*; others, that *Eir*, *Erin*, &c. mean simply west; that is, Ireland or Westland from Britain. Be this as it may, the topographical nomenclature is essentially Celtic, with a considerable admixture of modern English:—*Baily*, town or village; *kill*, church or cell; *bin*, mountain; *slieve*, mountain ridge; *ennis* or *inais*, island; *knock*, hill; *carrick*, rock-fort; *drum*, bare height; *garry*, rough; *allen* or *ain*, white; *ard*, projecting height; *rath*, rising ground; *ach* or *agh*, field.

ANTIQUITIES, &c.

The antiquities of Ireland may be classed under the heads of the *Cromleac*, the *Cairn*, the *Circle*, the *Pillar-Stone*, the *Barrow*, the *Dun*, the *Lis*, the *Rath*, the ancient *Stone-roofed Buildings*, and the lofty and beautifully-built *Round Towers*. The name *Cromleac* is compounded of *Crom*, which signifies Fate or Providence, and *leac*, a stone, literally 'the stone or altar of God;' and to what god they were dedicated sufficiently appears by the name retained by so many of these altars. They vary in size and form, and in most instances consist of three upright supporters, two at the lower, and one at the upper end, upon which the altar-stone was balanced; underneath this, and between the uprights, a hollow is usually found, which is thought to have been for the purpose of facilitating the passage of cattle and children under the sacred fire—a custom which seems to be alluded to in the Scriptures, when the Israelites are reproached with passing their sons and daughters through the fire to Moloch, one of the names given to the sun.

Of the *Cairn* there were two kinds—the burying and the simple cairn, or high place made of stones flattened on the top. These artificial high places were usually situated on an eminence; and here, on festival days, especially the 1st of May and the 1st of November, the fires of Bel were wont to be lighted. At these times all household fires were extinguished, to be rekindled by a brand from the sacred flame—a practice which continued till the time of St Patrick, who succeeded in putting an end to it. Tumuli of this description abound in all parts of the island.

Closely connected with the cairn, are the circles of upright stones, usually called *Druidic Circles*. They frequently surround a cairn, as that of New Grange in the county of Meath, where the stones are placed about one-third of the whole height above the base: frequently they encircle a pillar-stone.

The *Pillar-Stone* is so generally joined with the circle, cairn, cromleac, and sacred grove, that it cannot be passed over in silence. Numerous instances might be pointed out of lofty upright stones in many parts of the kingdom, standing sometimes singly, but most commonly in conjunction with one or more of the above-mentioned relics of Pagan times. Tradition says that formerly the people collected round such stones for worship, which is confirmed by the common expression in Irish 'of going to the stone,' for going to church or chapel. These stones are conceived by many to have given rise to the carved stone cross found in various churchyards, and of which one of the finest specimens is to be seen at Monasterboyce, in the county of Louth.

There are several kinds of tumuli remaining, of which the Irish names declare the original object. The *Lios*

or *Lis*, which signifies a fortified house, was an artificial hill, sometimes approaching in shape to an ellipse, with a flat top, and an earthen breastwork or rampart thrown round the little plain on the summit, where was placed the dwelling, usually protected by a strong wattled paling, as is now customary among the Circassians. The *Duns* or *Doons* were places of strength, always perched on a rocky, bold situation, and fenced by a broad wall of extremely large stones, which wall forms one of the distinctions between the dun and the lis. The *Rath* signifies a village or settlement: these abound in all parts of the island, and are of various sizes, standing sometimes singly, sometimes so as to form a chain of posts; and frequently may be seen a large head rath, where the chieftain lived, and its smaller dependent raths, on which his retainers dwelt.

Amongst the earliest and peculiar antiquities of Ireland, are the low *Stone-roofed Buildings*, with high wedge-shaped roofs: of these a few instances still exist at Kells, Kildare, Ardmore, and Killaloo. The most remarkable relics of the olden times of Ireland are the lofty *Round Towers*, of which, perfect and imperfect, 118 have been enumerated in various parts of the kingdom. They are built with a wonderful uniformity of plan. They are all circular, of small diameter, and great altitude. In most of them the door is at some height from the ground; small loophole windows, at distances in the sides, give light to the spaces where the different floors once were; and generally there were four larger-sized windows round the top, immediately below the roof, which is high and cone-shaped. There are, however, two or three towers in which it does not appear that there ever were any windows round the top. Of the excellence of the masonry, a proof was given some years ago by the tower of Mahera, which, in consequence of having been undermined, was blown down, and lay, at length and entire upon the ground, like a huge gun, without breaking to pieces, so wonderfully hard and binding was the cement with which it had been constructed. Various theories have been offered as to the purpose for which these mysterious buildings were erected; the only clear point seems to be, that they were connected with the religious rites of the early inhabitants, as they are always placed near churches. They vary in height from 85 to 120 feet; the internal diameter from 10 to 16 feet, and the outer circumference from 46 to 56 feet. Their tapering shape forms one of their most marked characteristics.

Ancient weapons and golden ornaments are from time to time dug up in all parts of Ireland, as bronze swords, exactly like those discovered at Carthage and on the field of Marathon. Multitudes, also, of spear-heads of all sizes, made of the same mixed metal, and curiously-shaped bronze rings, have from time to time been discovered, the use of which had long been a desideratum to antiquaries, when a recent event unexpectedly threw light upon the subject, and confirmed the conjecture of Sir William Betham as to their having been current money. A variety of golden articles have been discovered in many parts of the country, such as semi-lunar shaped disks, formed of thin plates of pure gold; torques, or large twisted collars for the neck; armlets, brooches, rings, pieces of gold, bell-shaped, but solid and fastened together, the use of which has not been made out; and some rings of the same shape as those of bronze, which have been proved by Sir William Betham to have been used as money.

Ecclesiastical Antiquities.—Under this head rank those buildings which may be considered as the most ancient, after the Pagan remains, and which bear a peculiar character, differing from that of any extant elsewhere. Of these but few are now in existence. The stone-roofed church of St Doulagh's, near Dublin, belongs to the earliest date; its plan and style are equally uncommon. The latter seems to have been a rude approach to the oldest Norman; it is low, and of great strength; the church, divided by a low-browed arch, seems to have had a small choir and a somewhat larger nave. There are also, strangely disposed, at various heights, small chambers, apparently for the residence of the clergy. A part of the building is used as the parish church; and the old tower has borne the addition of a belfry, so excellent was the mason-work. The beautiful and curious ruin at Cashel, called *Cormac's Chapel*, is Norman in character, and was probably the cathedral of that diocese previous to the English invasion. It is considered to have been built in the tenth century by Cormac, who was both king and archbishop. He died about A.D. 990. It is to be observed that both here and at St Doulagh's are crypts placed *over* the churches—a peculiarity known in Ireland only; the crypts in all other countries being underneath. In this very marked Irish-Norman style, there exist a few remains at Aghadoe near Killarney, at Clonathen in the county of Wexford, and near Bannow in the same county, in an ancient town, which having been, time out of mind, overwhelmed by the blowing sand from the coast, has only within a few years been discovered, but, protected by the sand, is in a high state of preservation. The peculiar character which marks these buildings, proves them to be examples of the Irish style subsequent to the age of the towers, and previous to that brought in by the British invaders. Ireland cannot boast of any ecclesiastical buildings of great richness or beauty; but there are some of respectable appearance. The two cathedrals of the capital, St Patrick's and Christ-Church, are at least elegant in the interior. The large cathedral of Galway, and that of Limerick, are both handsome buildings, as is the cathedral of Kilkenny. These are all in good order, and in daily use. There are numberless ruins of monasteries, abbeys, knights' preceptories, and churches, of which the chief are—*Kilcrea Abbey* in the county of Galway; *Corcomroe* in Clare, the finest ruin in Ireland; *Holy Cross* in Tipperary; the *Old Cathedral* on the Rock of Cashel, *Dunbrody* and *Tintern Abbeys* in Wexford; *Jerpoint* in Kilkenny; and *Lusk* in the county of Dublin. Kilconnel and Lusk are remarkable for rude bas-relievos in stone, which bear a degree of resemblance to the Egyptian hieroglyphics. Many of these still retain fragments of their former ornaments of fretted stone-work—Holy Cross in particular.

Military Antiquities.—The traveller in Ireland must be struck with the vast number of small castles which stud the whole country. They chiefly bear date about the reign of Elizabeth, by whose orders they were raised, as strongholds to overawe the wild Irish. They are usually high and square, with towers at each corner. Besides these fortalices, there are ruins of very large castles, so customarily attributed to King John, as to show that they were built in the early times. Of these, the extensive ruin at Trim, in the county of Meath, affords a fair example, as being one of the largest, and often formerly the residence of the viceroy or chief governor. Parliaments were held within its walls, and money minted there and sent into circulation. A few of the ancient castles belonging to the old nobility still continue to be inhabited, as *Malahide*, Lord Talbot's de Malahide; and *Howth*, the Earl of Howth's, both in the county of Dublin; *Shanes Castle*, the residence of Earl O'Neil; *Portumna Castle* on the Shannon, that of Lord Clanrickard; and *Kilkenny Castle*, the seat of the Marquis of Ormond.

LEINSTER.

This is the largest province of Ireland, and contains the twelve counties of *Louth*, *Meath*, *Dublin*, *Wicklow*, *Wexford*, *Carlow*, *Kilkenny*, *Kildare*, *Queen's County*, *King's County*, *Westmeath*, and *Longford*, the whole forming a large tract of country on the east side of the island, and having Dublin at a central point on the coast. The scenery of Leinster is much varied. The county most remarkable for picturesque beauty is that of Wicklow, a short way south of Dublin; the hills, glens, and valleys are here rich in natural wood, and, bounded by an extensive prospect of the ocean, can hardly be exceeded in beauty. The principal points of attraction for tourists are Lough Bray; a woody

ravine called the Dargle; and the Vale of Avoca, which is one continuous piece of sylvan pleasure-ground. Wexford, still farther south, may also, to a considerable extent, be described as a picturesque and fertile county; and though the county of Meath is for the most part flat and tame, except along the banks of the Boyne and Blackwater, it can boast there of some spots of redeeming beauty; as an example of which *Beau Parc*, the beautiful demesne of Gustavus Lambert, Esq., may well be mentioned; and in a large portion of the county, the quantity of wood and the rich hedgerows give an almost English character to the landscape. Westmeath is remarkable for expansive lakes, and for the dry gravelly hills which give variety to its surface. The Queen's County, though a good deal disfigured by bog, yet boasts, at Abbeleix and Dunmore, of a great stretch of magnificent natural oak wood. The remaining part of Leinster cannot be considered interesting or peculiar in its general features. The King's County contains the greatest portion of the flat flow-bog, on the eastern side of the Shannon; towards Roscrea, where the Slieve Bloom mountains terminate, there is some interesting scenery, especially about the ancient castle of Leap.

Leinster may be considered as much superior to the other provinces with respect to agriculture; and some parts of Carlow, Kildare, and Wexford, are cultivated in a manner approaching in skill to that of the agricultural districts of England and Scotland. In stock, implements, rotation of crops, and the industry with which manure is collected and composts manufactured, there is a great and increasing improvement. Farming societies, ploughing-matches, and premiums for new and better breeds of cattle, have greatly tended to this increasing prosperity; and they only who have witnessed what these districts were previous to the Union, can appreciate the amelioration which has since taken place. Near Dublin are some extensive paper manufactories, and in the county of Meath is a large flax-spinning mill. Generally speaking, however, there are but few manufactures in Leinster.

The counties of Wicklow and Wexford contain an industrious and thriving population; and because industrious, the people are able to pay, from soils not superior to those of other districts, rents which would be intolerable in other parts of Ireland. The Wicklow peasantry are reckoned the finest in the world, and are proverbial for their handsome features and fine Roman profiles, and still more so as being a respectful, quiet, and well-conducted people. The county of Meath is remarkably fertile; but being less subdivided, is therefore less populous than any other part of Ireland, considering the richness of its soil. The same prosperity as that in Wicklow and Wexford, though perhaps in a smaller degree, prevails in Kildare, Carlow, and the Queen's County. One of the chief causes of this prosperity is, that a large portion of the population receive money payments for their daily labour, and another, that the *cottier* and *con* or *corn-acre* systems are here less resorted to. The wages of Leinster are usually 1s. a day in summer, and in winter from 8d. to 10d., without diet. The average rent for arable land is from £1 to £1, 10s., and for pasture land from £2 to £3 per acre. The general diet of the peasantry is potatoes, milk, stirabout, eggs, butter, bacon, and herrings. Their dwellings are confessedly superior to those of Munster or Connaught. The resident gentry are more numerous, and take a great interest in the wellbeing of their tenantry. Leinster, therefore, may altogether be pronounced a much improved part of the country.

As the woollen and silk manufactures are still carried on in Dublin and other parts of Leinster, a slight sketch of their history may not be out of place in the account of that province. So early as the reign of Henry III. Irish woollen manufactures were imported from Ireland to England, duty free; and so excellent was their quality, that, from 1327 to 1357, they were exported to Italy, at a time when the woollen fabrics of the latter country had attained a high degree of excellence. The prosperity of the trade is noticed in an act of Elizabeth; and so flourishing was it in the time of Sir William Temple, that he became apprehensive lest it should interfere with that of the English. In 1688, the woollen manufacture was established to a considerable extent in the liberties of Dublin. But this prosperity was soon interrupted by the English presenting a petition for the imposition of such heavy duties on the exportation of wool, as greatly injured the trade. It never, however, became extinct in the liberties, though it now extends only to the manufacture of coarse fabrics. In 1773, the Dublin Society, anxious for its revival, procured an order that the army should be clothed with Irish cloth. This employment, however, became soon monopolised by one or two great houses which had parliamentary interest: one of these failed in 1810, and the failure was followed by the bankruptcy of almost the entire woollen trade of Dublin; for the general credit was so much affected, that the banks refused to discount the bills of the manufacturers, and consequently the crash became general. The trade is now almost confined to the city of Dublin and its environs, where good hearth-rugs and carpeting are still manufactured.

The *silk* trade was introduced by the French refugees, and about 1693 fully established by them in the liberties of Dublin. In 1774 an act was passed, placing it under the direction of the Dublin Society, for the extent of two miles and a-half round the castle; and that society was empowered to make regulations for its management, which it accordingly did, and also opened a silk warehouse, and paid a premium of 5 per cent. on all sales made therein. But this warehouse was ruined by an act passed about the year 1786, prohibiting any of the funds of the Dublin Society from being applied to support any house selling Irish goods either wholesale or retail. This act gave to the manufacture a check by which hundreds of people were thrown out of employment. According to a return made in 1809, there were still 3760 hands engaged in it, who, after the passing of this cruel act, struggled to support the trade; but when the protecting duties were taken off in 1821, and steam communication opened with England, the Irish market was inundated with goods at a smaller price than that at which her native fabric could be produced, and thus the ruin of the trade was completed. The tabinet fabric of silk and worsted (See No. 22), for which Dublin has long been famous, is the only branch of the silk business which has not materially suffered from these discouragements.

Chief Towns.

The chief towns in Leinster are *Dublin*, *Kilkenny*, *Drogheda*, *Wexford*, *Maryborough*, *Mullingar*, *Carlow*, *Birr*, or *Parsonstown*, and *Trim*.

Dublin, the principal town in Leinster, and the capital of Ireland, is situated at the margin of a beautiful bay, on a generally flat piece of country, through which flows the River Liffey, and is therefore agreeably placed both for commerce and the accommodation of a large population. In point of size, Dublin occupies a place between Edinburgh and London, and its appearance never fails to surprise and delight the stranger. In external aspect it is essentially an English town, being built of brick in a neat and regular manner, but abounding in a class of elegant public structures of stone, which resemble the more substantial embellishments of Paris and other continental cities. The river, flowing from west to east, divides the city into two nearly equal portions, and is a striking feature in the general plan. The leading thoroughfares of the city are easily comprehended. First, from east to west, there is the double line of houses and quays bordering upon the river, the lower part of which forms a harbour, and is crowded with vessels. Crossing this line at right angles, is the great line formed by Sackville, Westmoreland, and Grafton Streets, the first and second of which are connected by Carlisle Bridge, the lowest in a range of eight or nine which

span the river at various distances from each other. Parallel to the quays, on the south side of the river, there is a shorter arterial line of great importance, formed by College Green, Dame Street, Castle Street, and Thomas Street, being terminated to the east by the buildings of the University. Though the ancient part of the city occupies the south bank of the river, there is a portion of the mean and elegant on both sides; the streets and squares of the wealthy being here, contrary to the usual rule, in the north-east and south-east districts. All the great lines are formed by houses of lofty and elegant proportions, chiefly devoted to commerce; and perhaps no city can present a more splendid series of shops and warehouses. Sackville Street, 100 perches in length and 6 in width, with a noble monumental pillar in the centre, and some of the finest public buildings in the world lending it their effect, must impress every one as something worthy of a great city. The spaciousness of several of the squares in the aristocratic districts is equally impressive. Merrion Square is half, and St Stephen's Green nearly a whole mile, in circumference; the latter containing seventeen acres of pleasure-ground in the centre.

On first walking into the streets of Dublin, the stranger is apt to see, in the throng of carriages and foot-passengers, nothing more than what he expects to find in all large cities. He soon observes, however, that, besides the luxurious class who occupy the better kind of vehicles, and the busy, well-dressed crowd who move along the foot-ways, there is a great multitude of mean and mendicant figures, such as are only to be found in a small proportion in other cities. This is the very first peculiar feature which the stranger detects in Dublin, and it is an unfortunate one. It is explained when we learn, that of the large population of Dublin—supposed to approach 300,000—fully three-fourths are beneath what is recognised in Britain as the middle rank. Thus the most respectable streets in Dublin, and the most elegant figures which appear in them, seem isolated in the midst of penury and meanness.

The public buildings of Dublin boast an elegance much above what might be expected from the general character of the city. In sailing up the river, the eye is first attracted by the Customhouse, a large and splendid edifice in the well-known taste of the Adams, surmounted by a dome, and very happily situated upon the north quay. The Post-Office, in Sackville Street, is in that graver form of the Grecian style which has more recently come into favour, extending above 200 feet in front, with a noble portico surmounted by a pediment. The simultaneous starting of the mail-coaches, at a certain hour every evening, from the court of this building, is one of the sights of Dublin. Opposite to it is a pillar in honour of Nelson, surmounted by a figure of that hero. At the upper extremity of Sackville Street is the Lying-in Hospital, a beautiful building, with which is closely connected the more celebrated Rotunda, together with an extensive plot of ornamental ground. The Four Courts—also a most superb structure—overlooks the river at a point considerably removed to the west, and completes the list of remarkable buildings in the northern division of the city. To the south of the river, the objects worthy of especial notice are more numerous. The buildings of the University (founded by Queen Elizabeth in 1592) occupy a conspicuous situation on the great transverse line of streets which has already been mentioned. Beneath an elegant Grecian front, 300 feet in length, an archway gives admission to a succession of spacious squares, chiefly composed of brick domestic buildings, and containing a theatre for examinations, a museum, a chapel, a refectory, a library, and other apartments necessary for the business of the institution. In the museum is preserved an ancient harp, generally represented as that of Brian Boroimhe, a famous Irish king of the tenth century. There are usually about two thousand students in attendance at the University. Divided from this building only by the breadth of a street, is the Bank of Ireland, formerly the place of assembly of the Irish Houses of Parliament. The deep colonnaded front of this building is one of the most beautiful pieces of architecture, not only in the British dominions, but in the world: it carries a charm like a fine picture. The hall where once the Commons of Ireland assembled—where the eloquence of a Grattan, a Curran, and a Flood, was once heard—is now altered to suit the purposes of a telling-room; but the House of Peers remains exactly as it was left by that assembly, being only occasionally used for meetings of the Bank directorate. The latter is a small, but handsome hall, adorned with tapestry representing transactions in the subjugation of Ireland by King William—the Battle of the Boyne, the Breaking of the Boom, and so forth, as also a few appropriate inscriptions.

In Kildare Street, at no great distance from the College and Bank, the halls of the Royal Society of Dublin present a powerful claim to the attention of strangers, in the great variety of curiosities, pictures, and models with which they are filled. In a perambulation of the city, the Castle is the next object worthy of notice. This ancient seat of the viceregal government, to which rumours of plots and insurrections have been so often brought by terror-struck spies or remorseful participators, is placed on slightly-elevated ground, in the midst of the old or southern division of the city. It consists of two courts, containing certain public offices, and the apartments of state used by the Lord-Lieutenant. In the lower court is the Castle Chapel, a beautifully-constructed and beautifully-furnished modern Gothic place of worship, the whole materials of which are of Irish production, and which cost above £40,000. The service performed here every Sunday forenoon, graced, as it is, by the finest vocal and instrumental music, while a rich 'religious light' streams through stained windows, and is reflected from the gorgeous stalls of civil and ecclesiastical dignitaries, is one of the most attractive things in Dublin. The state-apartments of the Viceroy are in the taste of the middle of the last century, and are elegant, but not remarkable for grandeur. In one is a bust of Chesterfield, who was Lord-Lieutenant in 1745. The most remarkable room is the ball-room, denominated St Patrick's Hall, which is spacious and lofty, and among other attractions, has a ceiling ornamented with pictures, emblematical of transactions in the history of Ireland.

In Ireland, old ecclesiastical structures are usually more curious for their antiquity than their beauty. Accordingly, the exterior of St Patrick's and Christ-Church, the two cathedrals of Dublin, is apt to appear ungainly to an eye fresh from Westminster or Melrose. In the former building, nevertheless, the interior of the choir in which service is usually performed, will impress every mind by its lofty proportions, its pompous monuments, and the dark stalls and niches, surmounted with the helmets and banners of the knights of the order of St Patrick. In visiting this ancient church, the predominant thought is—SWIFT. We look for his dwelling as we approach, and for his tomb when we enter—such is the power which genius has of fixing the feelings of men for all time upon every external thing connected with it! The deanery still exists in St Kevin Street, containing the portrait of Swift from which all the engraved likenesses have been derived. The streets immediately surrounding St Patrick's Cathedral are the meanest and vilest in the city. The houses have a ruinous and forlorn look, and the pavements are crowded with a population of the most wretched order. These streets are filled with shops, but the trades to which they are devoted serve rather to betray the misery than to manifest the comfort of the people. Here dealers in old clothes, pawnbrokers, spirit-dealers, and persons trading in offals, almost the only kinds of animal food indulged in by the lower orders of the people, abound.

At the western extremity of Dublin, on the north side of the river, is the celebrated public promenade denominated the Phœnix Park, said to consist of about

a thousand acres. Not only does this park greatly exceed those of London in extent, but it is questionable if even the Regent's Park, after all the expense incurred in ornamenting it, will ever match this domain in beauty. The ground is of an undulating character, and is covered with groups of fine old timber and shrubbery, amidst which are the domestic residences of the Lord-Lieutenant and his principal officers, besides some other public buildings, and a tall obelisk in honour of the Duke of Wellington's victories. A zoological garden has lately been added to the other attractions of the park.

Dublin was formerly a busy literary mart, in consequence of the state of the copyright law, which allowed of cheap reprints of British books being here issued. After a long interval, the activity of its publishers has lately revived, and there are now several houses which afford considerable encouragement to native talent. Dublin possesses a number of charitable institutions, conducted on a scale of great liberality; also several religious and educational societies, whose operations are extended over the whole kingdom. The trade carried on in the town refers chiefly to home consumption; and excepting tabinets or poplins, it is not distinguished as the seat of any manufacture. There is very little foreign export from Dublin. Its principal imports are—timber from the Baltic; tallow, hemp, and tar from Russia; wine and fruits from France, Spain, and Portugal; tobacco, bark, and spices from Holland; and sugar from the West India islands.

The most important branch of its commerce is that carried on with England, chiefly in connection with Liverpool, to whose market there are now large exports of native produce. Though the Liffey forms the harbour of the port, vessels of large burthen, and steamboats, have an opportunity of preferring the harbour at Kingston (formerly called Dunleary), at the mouth of the bay, on its southern side. This harbour, which is constructed on a magnificent scale, with the neat town adjacent, may at all times be readily reached by railway from Dublin, which proves a great convenience to the inhabitants. At the opposite side of the bay from Kingston is Howth, whose celebrated 'hill' forms a distinguishing land-mark. In 1845 there were 260 sailing vessels under, and 218 above, 50 tons burthen, making an aggregate tonnage of 28,500; 35 steamers, with an aggregate burthen of 8650 tons; and the customs' receipts exceeded £1,043,000.

The number of light private vehicles in Dublin is one of its most remarkable distinctive features. These are generally of the kind called cars, drawn by one horse, and having a seat on each side, admitting of two or more persons sitting with their faces outwards. To keep a car is one of the highest aims of the ambition of a Dublin tradesman. 'Previous to the Union,' says an intelligent writer, who has been consulted with advantage, 'Dublin was the constant residence of 271 temporal and spiritual peers, and 300 members of the House of Commons. At present, about half-a-dozen peers, and 15 or 20 members of the House of Commons, have a settled dwelling within its precincts. Other persons of this exalted class of society, whom business or amusement may draw to the capital occasionally, take up their residence at the hotels, which are numerous in the city. The resident gentry of Dublin now amount to about 2000 families, including clergymen and physicians, besides nearly an equal number of lawyers and attorneys, who occasionally reside there. The families engaged in trade and commerce are calculated at about 5500, and the whole may yield a population of 60,000 or 70,000 in the higher and middle ranks of society. The change which has taken place, though injurious to commercial prosperity, has perhaps in an equal proportion proved beneficial to public morals; the general character of the inhabitants, which was once gay and dissipated, has now become more serious and religious, and those sums formerly lavished on expensive pleasures are now happily converted to purposes of a more exalted nature. Formerly there were seven theatres well supported; at present the only one which remains is frequently thinly attended. Club-houses and gaming-tables are nearly deserted; and even among the lower classes vice of every kind has visibly diminished.' In 1831 the population of Dublin was 204,155; and in 1841, 232,726.

Kilkenny, the capital of the county of the same name, situated on the River Nore, was formerly a town of great consequence, as its ancient castle, the ruins of its embattled walls, and churches, testify. Till lately, it carried on a considerable trade in the manufacture of woollen cloths and blankets; but these branches have in a great degree fallen off, and the business is now confined to the retail of necessaries for its inhabitants, and the sale of the agricultural produce of the district. The city contains several good streets, which are respectably inhabited, both by private families and tradesmen; but the suburbs are miserable. The most conspicuous ornament of the city is the fine baronial castle of the Marquis of Ormond, full of historical associations, rising boldly over the Nore. The Cathedral of St Canice, built in 1202, is not excelled by any of the ancient ecclesiastical buildings in the kingdom, except St Patrick's and Christ-Church in Dublin. The town possesses a number of respectable schools, and various asylums and other beneficiary institutions. Near the town, as already noticed, there is a marble quarry of considerable local importance. Population in 1831, 23,741; in 1841, 23,625.

Drogheda, in the county of Louth, and situated on the Boyne, in the line of road from Dublin to Belfast, is a town of respectable appearance, and the seat of an industrious population. From the time the English settled in Ireland, this town was called *Tredagh*, and considered of such importance, that parliaments were formerly held in it. In 1649 it was stormed by Cromwell, and the inhabitants put to the sword, except a few who were transported to America. Five steamers ply regularly between Drogheda and Liverpool or Glasgow, carrying out corn, cattle, sheep, pigs, and fowl, and bringing back cotton cloth, timber, leather, tobacco, salt, and iron. Drogheda contains three Episcopal churches—St Peter's, St Mary's, and St Mark's, which is a chapel of ease to St Peter's; four Roman Catholic chapels, two convents, and a friary. The chief civic buildings are a handsome tholsel, customhouse, mayoralty-house, jail, and linen-hall. The town does not bear a literary character: it has, however, four tolerably good booksellers' shops and a reading-room: there is also a mechanics' society in Drogheda. Its principal manufactories are a flax-mill, two foundries, salt-works, a distillery, and three breweries. There are, besides, several large flour-mills, and a soap and candle manufactory. There is a salmon-fishery on the Boyne, close to the town; and cod, haddock, plaice, soles, and gurnet, are abundantly caught along the coast. The linen trade is still carried on in Drogheda, though it is at present in a very depressed condition. The time of its greatest prosperity was from 1814 to 1820, during which period 4000 pieces of linen were averaged to be the weekly product. There was also a temporary revival of the cotton trade in this town; but in the commercial panic of 1825–6, many of the Drogheda weavers passed over to Manchester and Oldham, others went to France, and a large body emigrated to America, in consequence of which the cotton business ceased. The population in 1831 was 17,366; and in 1841, 19,260. In 1845 there belonged to the port 41 sailing vessels, with a tonnage of 3814; 5 steamers, with a tonnage of 2775; and the customs in the same year amounted to £9,372.

MUNSTER.

Munster contains six counties, *Clare*, *Cork*, *Kerry*, *Limerick*, *Tipperary*, and *Waterford*, and may be considered as that part of Ireland in which the national character and the national habits of all kinds are maintained in their greatest purity. Some of the largest seats of population in the island, as the cities of Cork, Waterford, and Limerick, are situated in Munster. The

province contains many tracts of beautiful scenery, and one in particular, which is allowed to be unequalled in the kingdom—the celebrated lake district at Killarney.

The *lakes of Killarney* are situated in the bosom of the mountainous county of Kerry, and are annually visited by travellers from all parts of the island, as well as from neighbouring countries. They are three in number, of unequal size, and considerably varied with respect to surrounding scenery, though that may be described as generally of a mountainous character. Lough Lane, or the Lower Lake, by far the largest of the three, is skirted on one side by the level and well-cultivated country surrounding the pleasant village of Killarney; on the other side rise the Glena and Tomies Mountains. In this lake there are a number of wooded islands, one of which contains the ruins of an abbey, and another the remains of an ancient castle. On the shore, towards the east, is the beautiful ruin of Muckross Abbey. Divided from the Lower Lake by the fine wooded promontory of Muckross, but accessible by two channels of level water, is the Middle Lake, called also Turk Lake, from the name of the mountain at whose foot it reposes. Over and above the islands which stud the surface, the beauty of these two sheets of water may be said to consist in the irregular promontories and slopes, generally wooded, by which they are surrounded, and above which the mountains tower in sterile grandeur. In many nooks of the scenery, elegant mansions look out upon the lakes; in others the mountain streams are seen descending in glittering cascades. The Upper Lake, the third of the series, is 3 miles apart from the middle one, on a higher level, and totally embosomed amidst the hills. A stream descending from the one to the other can be passed in a boat; and at a particular place on the passage, it is common for tourists to have a bugle played, in order to enjoy the oft-repeating echoes which it awakes in the neighbouring hills. The Upper Lake, having the wooded heights of Dericunighy on one side, the round-headed Purple Mountains on the other, and at the head, the bare many-coloured ridge of Macgillicuddy Reeks, while the surface is broken by a variety of sylvan islets, presents a landscape of enchanting loveliness. In connection with the lakes, there is a narrow rugged vale named Dunloe, which is usually taken in by a tourist in a survey of this fine scenery.

Amongst other beautiful places in Munster, we can only particularise Glengarriff, a rugged and most picturesque vale near the head of Bantry Bay; the banks of the Blackwater, between Lismore and Youghal; the River Lee, below Cork, and the fine natural harbour (the *Cove of Cork*) in which it terminates; and the lofty iron-bound coasts of Clare, amidst which are some scenes of uncommon grandeur.

The soil in the southern parts of Limerick and Tipperary is perhaps not inferior in fertility to any portion of Europe. The Corkass lands of the former, and the Golden Vale of the latter, are celebrated for their extraordinary richness. These districts are chiefly appropriated to the feeding of black cattle. Wheat husbandry is cultivated throughout the limestone districts of Tipperary, Clare, and Limerick, while dairy-farming is followed in the mountain districts of Kerry and Waterford. The potato culture necessary to supply the wants of an over-dense population, is eagerly pursued throughout the whole province; and it is a deplorable fact, that a large portion of that population have no other food during the greater part of the year. The grass farms let in large divisions of from 150 to 400 acres, at from £2 to £3 per acre. In the dairies of the county of Cork, the great butter country of Munster, it is no uncommon thing to have from one to two hundred cows in profit; the advantage of which is, that a cask is filled at once by butter all of the same churning. The sweet thick cream only is churned, and that every morning. The pastures of these dairy-farms are highly manured, and are never broken up for tillage, experience having taught the dairy-farmers that the older the sward the richer is the milk.

Daily labourers are usually paid from 6d. to 10d. per day; or if engaged by the year, from 6d. to 8d. In the latter case, it is supposed that the labourer has a house, and grass for a cow, at what is called a moderate rent, and which, in the estimation of the labourer, is equivalent to additional wages. The food of a great part of the Munster peasantry consists of potatoes; to this is usually added milk, and if they live near the sea, haak or herrings. In Cork, but few of the labouring poor have cows, because milk can be had in abundance at a moderate price at the dairies. It is, however, very customary to have ewes, which not only supply a tolerable quantity of milk, but furnish clothing. The women spin and dye the fleeces, and have them woven into thick frieze, and fulled at the village fulling-mill: from this practice, the southern Munster men are remarkably well clothed. The cottages, or rather cabins, are, generally speaking, wretched; but it may be stated that in the dwellings and furniture of the people there is a growing improvement. The character of the Munster peasantry may be considered as of mixed good and evil—the evil arising from a total want of restraint in early childhood, bad education, or, as frequently happens, none at all. Female education is peculiarly neglected; and it is deplorable to see marriages contracted when the wife has few or no capabilities for managing a family, and rendering her husband comfortable, or his house a happy home.

Generally speaking, the trade of M[illegible] consists in the export of provisions and agricult[illegible]duce, as wheat, oats, and potatoes, to a large [illegible]. There is on the Shannon an active fishery for [illegible]t, herrings, &c. and abundance of excellent fish are [illegible] into Limerick, Ennis, Kilrush, and to the county of Kerry. Along the coast of Cork there is a fishery for pilchards, herrings, and other kinds of fish, which are caught in great quantities, so that frequently the farmers manure the fields with sprats.

Chief Towns.

The leading towns of Munster are *Cork*, *Limerick*, and *Waterford*. The name *Cork* is derived from the Irish word *Corcah*, which signifies a marsh. This city, which ranks as the second in Ireland with respect to population and commercial importance, stands on the River Lee, which, through several channels, pours its waters into the harbour, from whence the tide flows to some distance above the town. The streets are built along the river channels, which, being all quayed, give the city somewhat of a Venetian character: of late years, however, the narrower have been arched over, and now only the main streams, in which the merchant vessels lie, are left open.

The Episcopal ecclesiastical buildings of Cork consist of seven parish churches, the Cathedral of St Fin Barry, St Luke's Chapel of Ease and Free Church, the Chapel of the Foundling Hospital, and the Church of St Michael's at Blackrock: two other churches are in progress. There are four Roman Catholic chapels, three new ones nearly completed, and four friaries. There are numerous dissenting chapels—two meeting-houses for Wesleyan Methodists, one for the Primitive Wesleyans, one for Anabaptists, two for Presbyterians, one for the Society of Friends, and two for two other small bodies of dissenters. A new Scotch church is in progress. The principal public buildings are—the Bishop's Palace, which stands on a height overlooking the town; a new jail, a little to the west of the city; the Customhouse, large and handsome barracks, the City Library, the Reading-Rooms, the infirmaries, the Chamber of Commerce, the Steam-Packet Office, and a well-built and spacious court-house, having in front a pediment supported on six Corinthian columns, and surmounted by an emblematic group of colossal figures. There is now in progress a new savings' bank, an extensive and ornamental building, but not more than half erected; also a new banking-house of cut stone for a branch Bank of Ireland; a new and showy corn-market house; and an extensive workhouse for the Poor-Law Union, about three-quarters of a mile from the city.

Cork boasts of many schools—the Blue-Coat Hospital, for twenty-two sons of reduced Protestants; the Green-Coat Hospital, for twenty children of each sex, to be brought up Protestants; the Cove Street Infant, Diocesan, Lancastrian, and Female Orphan Schools; the diocesan schools for the united diocese of Cork and Ross, a free school founded by Archdeacon Pomeroy, and one of the national colleges.

Among the charitable institutions in this city are—Bertridge's Charity, where are maintained seven old Protestant soldiers; Skiddy's Almshouse, where twelve aged women receive £29 yearly; Deane's Schools, where forty poor children are clothed and taught gratis. There is, besides, a masonic female orphan asylum, and several almshouses. Indeed, in proportion to its size, Cork bears a peculiarly high character for benevolence.

There are five societies here, whose objects are almost entirely scientific—the Royal Cork Institution, the Cuvierian, the Scientific and Literary Societies, the Mechanics' Institute, and the School and Library in Cook Street; one public subscription, and several circulating libraries; eighteen Protestant societies, devoted to religious purposes; four benevolent societies, for the relief of the distressed; five philanthropic societies, two lunatic asylums, and a school for instructing the deaf and dumb poor in George's Street.

The chief exports of Cork are grain, butter, cattle, and provisions; its chief imports, wine, tea, sugar, and coals. Steam-vessels communicate between Cork and Dublin, Bristol and Liverpool; and steamboats also ply daily between Cork and Cove. The population of Cork, according to the census of 1831, was 107,016; in 1841, 106,055. In 1845 there were 364 vessels belonging to the port, with an aggregate tonnage of 40,000; 14 steamers, with a tonnage of 2900; and the customs' duties exceeded £302,000.

Limerick, the chief city of the west of Ireland, is situated on the Shannon, near the place where that noble river expands into an estuary. It consists of the Old and New Town, respectively situated on the north and south sides of the river, and connected by an elegant modern bridge. The new city contains many good streets, filled with handsome shops; but the Old Town is confined, dirty, decayed, and inhabited by a very miserable population. Limerick contains a handsome cathedral of some antiquity, situated in the old part of the city, six Episcopal churches and a chapel of ease, meeting-houses belonging to the Presbyterians, Independents, and the Society of Friends, with five Roman Catholic chapels, three friaries, and one nunnery. The principal public buildings are the Exchange, the City Courthouse, the City and County Jail, the Police Barrack, the Customhouse, the Commercial Buildings, the Linen-Hall, the Market, and two banks. Though Limerick is not a particularly literary city, it has an excellent library and some very good booksellers' shops. The principal school at Limerick is the Diocesan, but there are many private day and boarding schools. There are many charitable institutions—as the County Hospital; the House of Industry for the aged and infirm, widows, orphans, young females, and deserted children; the Corporation Almshouse; Dr Hall's and Mrs Villiers's Almshouses.

With regard to the trade of Limerick, it has been observed, that though it has increased with the extension of the city, it has done so by no means in an adequate proportion when its peculiar advantages are considered; the Shannon, which connects it with Clare, Kerry, Waterford, and Tipperary, affording it innumerable commercial facilities. The quays of Limerick are nevertheless a scene of considerable bustle, though chiefly frequented by vessels for the export of the native produce. Provisions to the amount of 75,000 tons are here shipped annually. In 1845 the port had 114 vessels, with a burthen of 15,000 tons; and the gross receipt of the customs amounted to £177,000. The population of Limerick in 1831 was estimated to be 66,555, and in 1841, 65,296.

Waterford, the chief town of the county bearing its name, and a large seaport, is situated on the Suir, a few miles from its junction with the sea. Native produce, to the value of £2,000,000, is annually exported from this city; but the imports are comparatively unimportant. There is here a fine cathedral, founded by the Ostmen, and endowed with lands by King John, and several churches, meeting-houses for the Presbyterians and the Society of Friends, a French church for the Huguenots, and several abbeys and friaries. The principal buildings are the Bishop's Palace, the Exchange, and the City Jail. Amongst its schools are the Latin Free School, and the Blue Boys' Free School, in which seventy-five are instructed and partly clothed gratis, and the boys apprenticed to different trades. The population in 1831 was 28,820; in 1841, 29,288. In 1845 there belonged to the port 186 sailing vessels, whose tonnage amounted to 23,000; 4 steamers, with a burthen of 1000 tons. The gross receipt of customs' duties exceeded £173,000.

ULSTER.

The most northerly of the provinces is ULSTER, containing the counties of *Antrim*, *Armagh*, *Cavan*, *Donegal*, *Down*, *Fermanagh*, *Derry*, *Monaghan*, and *Tyrone*. The province of Ulster is hilly. The scenery is in general picturesque, especially in the vicinity of its chief towns, Derry, Belfast, and Armagh. In the county of Antrim, the country from Glenarm to Bengore Head presents a succession of striking and romantic views. The most remarkable feature of this scenery is the peculiar conformation of the basaltic columns with which it abounds, and of which the arrangement is strikingly displayed in Fairhead and the *Giants' Causeway*. Bengore, one of the promontories of the Causeway, lies about 7 miles west of the little town of Ballycastle: though generally described as a single headland, it is composed of many small capes and bays, each bearing its own proper name, and of these capes the most perfect is *Pleaskin*. The summit of Pleaskin is covered with a thin grassy sod, which lies upon the rock, the surface of which is cracked and shivered. About 10 or 12 feet from the top, the rock begins to assume a columnar character, and standing perpendicularly to the horizon, presents the appearance of a magnificent colonnade, supported on a foundation of rock nearly 60 feet in height. About 8 miles from Pleaskin is *Fairhead*, the easternmost head of the Causeway, which presents a huge mass of columnar stones, of coarse texture, but many of them more than 200 feet in height. Some of these gigantic stones seem to have fallen from the top, and now present to the eye of the spectator the appearance of groups of artificial ruins. The part which may more properly be called the *Giants' Causeway* is a kind of quay, projecting from the base of a steep promontory some hundred feet into the sea: it is composed of the heads of pillars of basalt, which are placed in close contact with each other, forming a sort of polygonal pavement, somewhat like the appearance of a solid honeycomb. The pillars are jointed, and their articulation curiously exact, the convex termination of one joint always fitting with precision into a concave socket in the next. Within about 2 miles of the Giants' Causeway stands Dunluce Castle, situated on the summit of a rock whose base is washed by the ocean, by the ravages of which great part of the building was suddenly swept from its foundation. The mansion and offices stand upon the mainland, divided from the fortress by a deep cut which separates the rock on which the castle is placed. Over this chasm lies the only approach to the building, along what was one of the walls of the drawbridge: should the passenger miss his footing on this narrow path, there is not the slightest protection on either side to save him from the abyss beneath.

The soil of Ulster varies much. In the counties of Armagh, Down, Antrim, Derry, and Monaghan, it passes from a deep rich fertile clay to a dry sandy or gravelly loam; while in Donegal, Tyrone, Fermanagh, and Cavan, a great proportion of it is cold, wet, and

spongy. Tillage is, in general, in an improved state throughout this province; and though the old Irish plough and the slide car are still occasionally used in the remoter parts, many of the modern implements of husbandry have been introduced, especially in Down and Londonderry. The English spade has nearly displaced the long or one-sided spade; the angular harrow and the thrashing-machine are much in use; and the Scotch plough has almost superseded the heavy Irish one. The corn crops most general are oats, bere, barley, and a small proportion of wheat. Barley is in Derry said to pay the summer's rent, and flax the winter's. Potatoes are largely planted by rich and poor, and gentlemen-farmers cultivate turnips and mangel-wurzel. Lime and peat are the most usual ingredients of the manure employed in the inland districts; while in the maritime counties, sea-sand, sea-weed of different sorts, and various kinds of shells pulverised, are used in addition. From the wetness of the soil, in some of the northern parts of Monaghan, the manure is usually carried to the fields in baskets, called *bardocks*, which are slung over asses' backs or the shoulders of the poor women. A small but hardy race of horses is reared in the island of Rathlin, or Raghery; and the old Irish sheep still prevails in and near Carey, in the county of Antrim. Pigs, goats, and donkeys, are numerous, the latter being much used in the counties of Cavan and Monaghan. A good deal of butter is sent to the markets of Belfast, Antrim, and Derry, from the various dairies scattered through Ulster.

Whatever were the manufactures of Ireland before the time of James I., they were swept away in the long series of wars between government and the local chieftains in the days of the Tudors; and the Scottish settlers in the north of Ireland, and those English whom Boyle, Earl of Cork, brought into Munster, may be considered the introducers of nearly all the manufactures that now exist in Ireland. During the reigns of Charles I. and II. much attention was paid to them; and the exertions of Lord Strafford, Sir William Temple, and the Duke of Ormond, caused the establishment of the linen trade to be attributed successively to each. The Duke of Ormond not only procured several acts for its encouragement, but sent Irishmen to Flanders to be instructed in the details of the flax manufacture; and also established a linen factory both at Chapelziod, near Dublin, and at Carrick-on-Suir. In the reign of William III., the linen business rose to still greater importance, from the compact between the English and Irish merchants to discourage the woollen and promote the linen trade; for which purpose they procured a statute to be passed, levying additional duty on Irish woollen goods, from a jealous fear that the prosperity of the Irish woollen trade was inconsistent with the welfare of that of England. Another impetus was given to the linen trade by the emigration of the French manufacturers, after the Edict of Nantes, of whom a large number took refuge in Ireland; and Mr Louis Cromelin, a leading manufacturer, obtained a patent for improving and carrying it on, and his efforts were crowned with considerable success. In the 9th year of Queen Anne, a board of linen and hempen manufactures was established, and linen allowed to be exported, duty free. In the 8th of George I., a grant was given to build a linen-hall, and another to encourage the growth of flax and hemp. Previous to 1778, bleached linen was sold in the fairs, the manufacturer being the bleacher; but when the manufacture extended, bleaching became a separate business. Considerable sums had been from time to time voted by parliament for its support; and during the eighteenth century the trade continued to advance, until the check it received during the American war. On the re-establishment of peace it revived, and was at its greatest height from 1792 to 1796. Since this period it has considerably increased, and though deprived of all artificial props, in the form of bounties, is now a flourishing department of industry. Belfast is the great centre to which the linens, not only of Ulster, but also of the weaving districts in the west of Ireland, are sent for sale; and from hence large quantities are exported to foreign countries. The linen trade prospers at Castlewellan, Rathfriland, and Banbridge, in the county of Down, and also at Lurgan in the county of Armagh, where the weavers are at once weavers and manufacturers. At Dungannon, in the neighbouring county of Tyrone, it has greatly declined, and is in Donegal chiefly confined to those who work for farmers or market sale.

The province of Ulster was also the seat of the first cotton manufactory introduced into Ireland. In 1777 the manufactures were in the lowest state of depression. To give them some stimulus, Mr Joy conceived the plan of introducing cotton machinery from Scotland; and a firm for this charitable purpose was formed, of Joy, M'Cabe, and M'Craken; and a mill for spinning twist by water was erected by them at Belfast in 1784, at which time the manufacture may be said to have been established; and so rapidly did it spread, that in 1800, in a circuit of ten miles, comprehending Belfast and Lisburn, it gave employment to 27,000 individuals. But from want of assistance at home to protect it, and the embargo laid on American goods, which inundated Ireland with English manufactures, the trade has declined, and the cotton manufacture is now almost altogether confined to the county of Antrim. Through the early part of the present century, it was carried on to a considerable extent in Drogheda, Collon, Strafford, Mountmellick, Limerick, and Bandon. Belfast was, however, the place where most skill and capital were expended; as the trade increased there, it declined in other parts of the kingdom; and though large manufactories have formerly been established at Clonmel, Portland, and Limerick, it may for all practical purposes be considered as extinct in the other parts of Ireland.

Wherever the linen trade is in operation, the people have constant employment, in consequence of being able to fall back upon their looms when agricultural work is not in demand. They may be said, in common years, to enjoy a competency—that is, a sufficiency of food, raiment, and fuel. But in the western parts of Ulster—as, for example, the mountainous districts of Tyrone, Donegal, and Derry, where the linen manufacture does not exist to any extent—the labouring-classes are not much better off than in the three other provinces. However, speaking of Ulster generally, it may be said the lower classes have more self-respect, more industry, more desire for advancement in life, than in other parts of Ireland. In fact, they are a better educated, and therefore a more improving people. As may be expected, their taste for comfort operates in the economy of their houses and farms; and except in the mountainous districts above alluded to, where old habits still maintain their ground, the Ulster peasantry may be considered as a respectable class in society. The average rent of arable land is from £2 to £3 per acre, usually rising in the immediate neighbourhood of towns to £5 or £6. The wages in Ulster vary from 6d. to 9d. a day in winter, and in summer from 10d. to 1s. a day, without diet. The food of the peasantry is chiefly potatoes, oatmeal porridge, oaten bread, milk, and fish, which those who live near the sea vary with that species of sea-weed called the edible *alga*.

The salt-water fisheries of Ireland cannot be said to have ever thriven. Under the former system of the Irish Parliament, of giving bounties, large sums were at different times voted for their encouragement; but by this there was no real strength given, and on the withdrawal of these bounties, things fell below their natural level, and the sea-fisheries became altogether inefficient for any purpose but that of supplying the localities surrounding the fisherman's dwelling. The fishery laws are now enforced with regard to both the sea and river-fishing, and therefore there is reason to believe that this branch of industry is on the increase, and, if properly managed, will become one of the chief means of benefiting the island. The river-fisheries, though less productive than under better management they might have been, yet form in several parts of

Ulster a lucrative source of property. The lakes and rivers abound with trout, pike, perch, eels, and char; and on the Bann, the Foyle, and the Ballyshannon in Donegal, are established very successful salmon-fisheries. Formerly, whales were not unfrequently, and still are, though but seldom, taken at the coast-fisheries in this province. The salmon-fisheries of the Foyle and the Bann were early celebrated. In Phillips's manuscript they are stated to have been let from 1609 to 1612 at £666, 13s. 4d. a year; for three years at £830; for eleven years at £1060; and for twelve years, ending at Easter 1639, at £800. The right of fishing the river Foyle, so far as Lifford, is vested in the Irish Society by the charter of Londonderry, granted by James I. in 1613. The increase of the quantity of fish taken since the introduction of stake-nets is very considerable. The salmon for exportation to London and to Liverpool are packed with ice in boxes, fifteen salmon, weighing together about 90 lbs., being put into each case. In a report made to Sir William Petty about 1682, it is stated that the fishing for salmon in the Bann River, and so in all the salmon-fisheries, begins with the 1st of May, and ends on the last of July. But by the present law, the season now begins on the 1st of February, and ends on the 1st of September, seven months being open and five close. The Bann fishery has of late years been much neglected; but under the spirited and judicious management of Charles Atkinson, Esq., it has been much improved during the last year.

Chief Towns.

The chief towns in Ulster are *Belfast* and *Antrim*, in the county of Antrim; *Londonderry* or *Derry*, and *Coleraine*, in the county of Londonderry; *Donegal*, in the county of the same name; *Strabane*, in Tyrone; *Armagh*, in Armagh; and *Newry*, *Lisburn*, and *Downpatrick*, in the counties of Antrim or Down. Without reference to counties, Belfast, Lisburn, Newry, Armagh, and some places of smaller note, may be said to form a cluster of towns chiefly devoted to the linen manufacture, and all occupied by a population who, for generations, have been noted for their industry and peaceful habits.

Belfast is esteemed the principal town and seaport in this province of Ireland. It is advantageously situated on the west side of the Lagan, where that river swells into an estuary called the Bay of Belfast: distance from Dublin 85 miles. The ground on which the town stands is flat, while the beautiful and fertile environs on the western side of the vale are bounded by a picturesque range of mountains. Within the town, the opposite shore of the Lagan is reached by a long stone bridge, which also forms the egress from Belfast towards Donaghadee. Although this portion of Ireland is inhabited chiefly by Scotch, or their descendants, Belfast, like Dublin, is essentially an English town in external aspect, being built of brick, and having throughout a neat and regular appearance, with many handsome shops. The prosperity of Belfast is dated from the revolution of 1688, when religious and political tranquillity settled upon that part of Ireland. Belfast is in Ireland what Glasgow is to Scotland, and Liverpool to England. In manufactures, it is now the great depôt of the linen business, and the seat of the cotton trade, having within itself all the various branches necessary for producing and finishing these fabrics, from the finest cambric to the coarsest canvas. There are in Belfast and its suburbs fifteen steam-power mills, for the spinning of linen yarns. Among these, the factory of Mulholland and Company, employing 800 persons, spins 720 tons of flax annually, the yarn of which is worth £80,000. The hand-spun yarn sold on commission in the Linen-Hall (a cluster of buildings devoted to the use of linen factors), produces about £100,000 a year. The cotton trade is declining, several of the mills being employed in spinning flax; and there are now only six cotton-mills in the town. There are also extensive corn-mills, breweries, distilleries, and tan-yards, with manufactories of machinery, cordage, glass, iron, soap, candles, tobacco, &c. for home use and exportation. In commerce, its exports and imports are extensive; the amount of duties paid at the customhouse of late years averaging nearly £370,000. The number of vessels lately belonging to the port was 386, the aggregate burthen of which was 53,500 tons. Latterly, great improvements have been effected for the accommodation of the shipping, by deepening and contracting the harbour, and furnishing handsome and substantial quays, wharfs, and docks. The port usually exhibits a busy scene of industry, by the daily sailing and arrival of ships and steam-vessels. Ten steamers sail regularly—four to Glasgow, three to Liverpool, two to London, and one to Dublin. In the retail trade, the numerous branches are carried on in a spirited and tradesman-like manner; and the various markets for the sale of the rural produce, which is brought in large quantities to town, are well conducted; in a word, the whole system of trade and industry is on an efficient scale, and equals that of any town of similar size in England or Scotland. The prosperity of the town is likely to be augmented by a railway lately opened, which is designed to proceed to Armagh.*

Belfast abounds in Presbyterian and other Dissenters. The Episcopal places of worship are only two (some authorities say three) in number; but there are ten Presbyterian meeting-houses; there are also two meeting-houses of Independents; the Methodists, four; the Society of Friends, one; and the Roman Catholics, two. The town possesses some excellent charitable and humane institutions: the principal are—a poor-house for the aged and infirm, a house of industry, a lunatic asylum, an institution for the blind and for deaf mutes. This institution is on the same plan as that of Liverpool. The blind are employed in weaving and basket-making, and lately, by the introduction of raised letters, they have been instructed in reading. In 1824, there were in the town and parish sixty-three schools of all kinds, at which 2152 males and 1666 females were educated, exclusive of the Royal Academical Institution, which in 1825 contained 462 boys in its various classes. This institution originated in 1807, in a voluntary subscription of the inhabitants, by whom a fund was raised of above £25,000, to which the late Marquis of Hastings added £5000 for its erection and the endowment of its teachers and professors. It consists of two departments—one elementary, the other for the higher branches of science and literature. This establishment is directed by a president, four vice-presidents, twenty managers, and eight visitors, chosen by the proprietary. The chairs in the collegiate department are eight, embracing Divinity, Moral and Natural Philosophy, Logic, Mathematics, Greek, Latin, Hebrew, and a lectureship on Irish. The object of this academy was to give cheap home education to those who had heretofore frequented the Scottish colleges. The Synod of Ulster receives the general certificate of this institution as a qualification for ordination, and it may therefore be now considered the great seminary for the Presbyterian Church in Ireland. The Belfast Academy had been founded some time previously by private subscription.

Of literary societies, Belfast possesses the Society for Promoting Knowledge, founded 1788; the Literary Society for Improvement in Literature, Science, and Antiquities, founded 1801; and the Natural History Society, founded 1821. The town has lately received the valuable addition of a botanic garden, on a large scale, and laid out in an exceedingly tasteful manner. It was established and is wholly supported by the inhabitants of Belfast, and affords a pleasing proof of their spirit and liberality. The population in 1821 was 37,277; in 1831, 53,287; and in 1841, 75,308.

Londonderry ranks next to Belfast. Besides being a seaport of considerable importance, it is the seat of a bishop's see. It is situated on the west bank of the

* We have been indebted for a number of these particulars to 'The Tourist's Guide to Ireland,' a highly creditable work, published by Messrs W. Curry, Jun. and Co., Dublin.

Foyle, a few miles above the point where that river spreads into the harbour of Loch Foyle, and is distant 146 miles from Dublin. The original town, built by Sir Henry Dowera about 1603–4, was burned by Sir Cahir O'Dogherty in 1608; and the present city may be considered as deriving its origin from the London plantation, which was the immediate result of that catastrophe. The walls of Derry are described by Pynnar as 'excellently made, and neatly wrought; the circuit thereof about 284 perches, and in every place the wall being 24 feet high and 6 in thickness;' and after a lapse of more than two centuries, these fortifications retain their original form and character. The north-west bastion was demolished in 1824, to make room for a market; and in 1826 the central western bastion was modified for the reception of Walker's Testimonial; but the guns used during the celebrated siege are still preserved in their original places. The total number of cannon remaining in the city and suburbs is about fifty; and in the court-house yard stands *Roaring Meg*, so called from the loudness of her report during the siege. This cannon is 4 feet 6 inches round at the thickest part, and 11 feet long, and is thus inscribed—'FISHMONGERS, LONDON, 1642.'

The chief of the ecclesiastical buildings is the Cathedral. For nearly twenty years after its plantation, Derry was without a proper place of worship, part of the ruined church of St Augustine being employed for that purpose. At length a royal commission of inquiry was appointed, which, in 1628, reported that the corporation of London had begun to build a fair church in Derry, and in 1633 its erection was completed. This event is recorded in a tablet, which was originally placed over the door of the porch of the old cathedral, but is now over that of the belfry, bearing the following couplet:—

'If stones could speak, then London's praise should sound,
Who built this church and city from the ground.—A.D. 1633.'

The other principal places of worship are—a chapel of ease, a free church, several Presbyterian meeting-houses, a Wesleyan chapel, a Primitive Wesleyan Methodist chapel, also Reformed Presbyterian, Seceding, and Independent chapels, and a Roman Catholic chapel, which can accommodate 2000 persons. The principal buildings in the city are the Bishop's Palace, the Public Library and News-room, the Lunatic Asylum, the Jail, and the Corporation Hall. Of its various manufactories, the chief are two great distilleries, and two corn-mills, one worked by a steam-engine of eighteen, the other by one of twenty horse-power. The public schools in Derry are—the Diocesan, the Parochial, the Presbyterian, the Meeting-house, St Columb's, the Barracks, the Infant School; and besides these are many others, public and private. There is here a branch of the London Bible Society, the Londonderry Literary Society, and one for promoting religious, moral, and historical knowledge. There are also the Londonderry Farmers' Society, and the Mechanics' Institution. The port carries on a considerable traffic, both with respect to imports of foreign and British produce, and exports. The estimated value of the exports of Irish produce is above £1,000,000 sterling per annum. The population of Londonderry in 1831 was 10,130; and in 1841, 15,196. In 1845 the shipping belonging to the port exceeded 6200 tons; and the gross customs' duties £105,800.

The city of *Armagh*, situated in an inland part of the country, is of considerable local importance. It is placed in the midst of a rich and beautiful district, the face of which is singularly varied by detached hills, some of which are more than 1000 feet in height. This character of country stretches from Lough Neagh in the north to the north-western part of the county of Meath in the south, and is well watered by lakes and streams, and, generally speaking, richly furnished with wood. The city stands on a hill, which is crowned by the old cathedral, around which the town has gradually arisen. Within these few years, several handsome buildings have been erected, with cut stone fronts—the Court-house, the Jail, the Presbyterian Church, Primate Stewart's Free School, founded and liberally endowed by him, and well carried on; the National School, and the Savings' Bank. The cathedral has been re-edified within these five years, at an expense exceeding £30,000, in the pointed Gothic style, for the most part in very good taste; the organ is a remarkably fine one, and the choir excellent. The roads, in all directions, are admirable; and in the laying-out of the new ones, they are carried round instead of over the hills. There is water-carriage from both Belfast and Newry by lake and canal, to within four miles of the city; the streets have flagged footways, and are well lighted with gas. About forty years since, the population was only 1000; in 1841 it was 10,245. The archbishop of Armagh, primate of all Ireland, resides close to the town, as do also a large number of clergymen attached to the cathedral, as well as many respectable gentry. Near Armagh stands the Observatory, built and endowed by Primate Robinson, whose munificence greatly contributed to the advance of science and improvement of the whole diocese.

CONNAUGHT.

CONNAUGHT, the smallest of the four provinces, contains but five counties, those of *Leitrim*, *Roscommon*, *Mayo*, *Sligo*, and *Galway*. There are in this province large tracts of mountainous and sterile land, especially in the western parts of the counties of Galway and Mayo. The peninsula formed by the western part of the first of these counties is named *Connemara*, and is famed for its scenery, which somewhat resembles that of Argyleshire. It may be described as a vast tract of mingled bog, lake, rocky moorland, and mountain, bounded and partially penetrated by deep inlets of the sea, resembling the fiords of Norway. The principal lake is Lough Corrib, which is 20 miles long, full of islands, and surrounded by an extensive rocky desert, bearing no small resemblance to those of Arabia. Between this lake and the western extremity of Connemara, there is a range of tall swelling green hills, called the Twelve Pins of Bunabola; and to the north of these is an estuary famed for its wild scenery, named the Killery, many miles in length, and connected with the Atlantic by a passage only 30 feet wide. Connemara contains a small, scattered, and primitive population, unusually full of superstitious and old feudal feelings. Besides Clifden, a modern fishing-village on the west coast, there is scarcely any such seat of population in the district. There are, however, a few homely inns for the accommodation of the numerous tourists who flock thither during summer.

From the high grounds near Westport is obtained a view of Clew Bay, a magnificent sheet of almost enclosed water, full of islands, and bounded by lofty mountains, amongst which the most conspicuous are Croagh Patrick and Nephin. The islands of Clare and Achill bound the scene towards the west. In some states of the weather, and particularly when a summer sun is calmly descending on Clare, the view of Clew Bay is one of extraordinary beauty. The islands are said by the common people to be as numerous as the days in a year, but in reality are only about a hundred. Croagh Patrick is regarded with superstitious feelings by the peasantry, as the spot where their tutelary saint was accustomed to preach.

Amidst the great tracts of wild ground in Connaught, there are a few other spots of an unusually attractive character. The scenery round Lough Allen, out of which the Shannon flows, is extremely pretty, as is also that near Boyle, at the foot of the Curlew Mountains. At Lough Gill, near Sligo, a lake bearing a strong resemblance to the upper lake of Killarney, and the little Bay of Ardnaglass, into which falls the cataract of Ballysedare, are scenes of peculiar beauty. Much of the surface of Galway is flat, showing, for twenty miles together, a succession of narrow limestone rocks, like parapet walls of three feet high, placed in

parallel lines to each other, at distances of from three to ten feet: the intermediate spaces, though apparently but a waste of rock and stone, supply the finest sheep pasture in the kingdom.

The great central limestone district of Ireland occupies the southern portion of this province, which to the eye forms an exception to the general character of limestone countries, appearing so exceedingly barren, that in passing over tracts of Galway and Mayo, the traveller almost doubts whether he is not journeying over a great cemetery covered with tombstones, rather than over places where the sheep could find pasture or the peasant plant potatoes. There are, however, some exceptions to this prevailing sterility, for nowhere are finer sheep-walks found than in some parts even of the southern counties of Connaught. The tillage of this province is principally confined to oats and potatoes, as best suited to the shallow mountain bog-soil, which so largely prevails in the western baronies. The extreme moisture of the climate is so inimical to the growth of wheat, that except in a few parts of Galway, Connaught cannot be said to grow its own bread-corn. There is a great export of oats and potatoes from the ports of Galway, Westport, and Sligo. With regard to husbandry, though it certainly is improving, it is yet much inferior to that of the other provinces. The landholders pride themselves on the breed of long-wooled sheep, their great source of wealth; and the celebrated Fair of Ballinasloe, where from 80,000 to 100,000 are usually sold, year after year exhibits an improvement in this branch of rural economy. Horned-cattle, and horses, especially hunters, are also bred extensively in Galway. What has been said of Munster applies in a still more aggravated degree to Connaught. The property of an absentee landlord is usually divided into portions ruinously small; and if the proprietors do not quickly interfere, deplorable consequences must result from the subdivision system. The grazing farms are let in large portions, which it is the policy of the farmer not to diminish. Rents vary from £1 to £1, 10s. an acre, except in the vicinity of the towns, where they usually rise to £2 and £3; and wages are from 10d. to 1s. a day in summer, and from 8d. to 10d. in winter.

There have been many attempts to introduce the linen manufacture into Connaught, and markets for its sale were established in Sligo, Castlebar, Westport, and Galway; but though it thrives to an extent sufficient to supply the rural population, there is reason to believe that little if any linen is exported from the province. There is, from the ports above-mentioned, a pretty large export of oats, whisky, and potatoes.

The peasantry in Connaught are as poor as poverty can be without amounting to destitution; and except in the mountain districts, their situation is daily becoming worse—so much so, that poverty, in times of scarcity, which, on an average, occur about once in seven years, increases to destitution, and appeals to the richer members of the empire to save the labouring classes from actual starvation become unavoidable. The food of those who are the best off is generally dry potatoes, with occasionally a herring or an egg. In Connaught, the indigent peasant is reduced to a state of greater poverty, by grasping at the temporary relief afforded by the system called by the Irish name of *gambeen* (exchange), of which the principle is to furnish provisions to the poor, allowing time for payment, but generally charging an exorbitant interest. This system has led to the most deplorable results.

There is a good salmon-fishery near the town of Galway, and one for cod, haak, and haddock, which, from the poverty of those engaged in it, prevents them from providing sufficient tackling for their boats, and is thus less productive than it might be. In some years the sun-fish, or basking-shark, are abundant off the shores of Galway, and much excellent oil is produced; but this fish is so capricious, that the fishery cannot be looked to with any certainty. The salmon of Ballinahinch are regularly sealed up in tin cases by the gentleman who farms this fishery from Mr Martin, the principal proprietor of the country. There is a very productive salmon-fishery below the thriving town of Ballina, on the river Moy, from which large quantities of salmon are sent to the London market.

Chief Towns.

Galway, reckoned the capital of the west, and, in point of population, the fifth town in the kingdom, is situated in a valley lying between the bay which bears its name and Lough Corrib. The town is of considerable antiquity, and consists of streets and lanes huddled together without any regard to comfort or convenience. The whole partakes of the appearance of a Spanish town, the result probably of its early intercourse with Spain; and a small open space near the quay retains the name of *Spanish Parade*. The principal ecclesiastical buildings are the parish church of St Nicholas, founded in 1320, a Presbyterian meeting-house, and the Roman Catholic chapel. The Franciscans, Augustines, and Dominicans have monasteries here. The chief public buildings are—the County Court-House, a handsome cut-stone edifice, erected in 1815, with a portico of four Doric columns; and the Tholsel, built during the civil wars of 1641. The schools in Galway are mostly under the superintendence of the Roman Catholic religious orders. There is also one on the foundation of Erasmus Smith, one belonging to the National Board, and about sixteen parish schools. Galway possesses a house of industry, an asylum for widows and orphans, a Protestant poorhouse, and a Magdalen asylum, which is supported by two benevolent Roman Catholic ladies.

The chief manufacture of Galway is flour. There are a bleach-mill and green on one of the islands, an extensive paper-mill, and several breweries and distilleries, in the town. The exports consist principally of grain, kelp, marble, wool, and provisions; the imports of timber, wine, coal, salt, hemp, tallow, and iron. In 1845, the vessels entered inwards numbered 141, of an aggregate burthen of 13,000 tons; while the vessels cleared outwards amounted to 145, with a tonnage of 15,531. In 1840 a splendid dock was opened, from which great expectations are formed of the increase of trade. A steamer in this bay is highly necessary for towing out vessels in adverse winds. In 1845 there were 18 vessels belonging to the port, with a tonnage of 2700; and the gross customs' duties amounted to £28,000. In 1831, the population of the town was 27,775; and in 1841, 32,511.

Across the country in a northern direction, and also situated at the head of a bay bearing its name, stands *Sligo*, a town of a much smaller population than Galway, but more important as respects its commerce. It has carried on for several years a considerable trade, both export and import, and is still increasing, notwithstanding the bad state of its harbour. The exports are wholly limited to agricultural produce, and of late years have amounted to about 60,000 pigs, worth £200,000; 6000 black cattle, worth £60,000; 50,000 firkins butter, worth £125,000; 22,600 tons of oats, worth £132,000; and 12,000 tons of oatmeal, worth £132,000. In 1845, Sligo had about 26 vessels, with a tonnage of 3000; and the gross receipts of customs' duties was £31,000. The retail trade is extensive, articles of every description in demand being supplied to a large and populous district. The streets in the older part of the town are narrow, dirty, and ill-paved, and badly suited to the bustle of an export trade. But convenient markets have been erected, and the extension of the town, by regularly-built wide streets, is expected to remedy the inconvenience and irregularity of the older parts. Some good public buildings embellish the prominent points in and about the town, and the river Garwogue, which bears the surplus waters of Lough Gill to the bay, and turns several large flour-mills in its course, is a fine feature in the scene. The suburbs are beautiful and picturesque. In 1831 the population was 15,152; but in 1841 it was only 14,318.

ASIA—EAST INDIES.

Asia—the most extensive, the most diversified, and, so far as the early history of mankind is concerned, the most interesting of the great divisions of the globe—is situated between lat. 1° 28′ and 78° north, and long. 26° and 190° east. It thus occupies the greater portion of the Eastern Hemisphere, and is bounded on the north by the Arctic Ocean; east by the Pacific; south by the Indian Ocean; and west by Africa and Europe—being separated from the former by the Red Sea and the Isthmus of Suez, and from the latter by the Mediterranean, Black Sea, Caucasus chain, Caspian Sea, and the Oural Mountains. The region thus enclosed lies compactly together, the only irregularities in its bounding outline being that succession of peninsular projections and intervening gulfs which give character to its eastern and southern seaboard. Its greatest length, along the 40th parallel, is 5500 miles; the greatest breadth, from Cape Romania in the Malayan Peninsula to North-East Cape, along the 104th meridian, 5300 miles; and area, at the lowest estimate, 16,152,000 square miles, or nearly four times that of Europe.

SUPERFICIAL FEATURES.

The physical aspect and construction of the continent exhibits every species of diversity—vast mountain-chains and elevated table-lands, broad level steppes and sandy deserts, luxuriant plains watered by the largest rivers, tracts doomed to everlasting snow, or to scorching sterility, salubrious valleys of incessant verdure, and noisome jungles of the grossest growth. With such a variety of character, it is impossible to speak of it as a whole, and consequently geographers distinguish the following well-defined zones:—

1. *Northern* or *Russian Asia*, including the whole of the continent north of the Altai and Iablonnoi Mountains—a region traversed by large rivers, bleak and barren, suffering under an intense cold, thinly peopled, and almost physically incapable of improvement. West of the river Yenesei this tract presents a succession of *steppes;* that is, level countries with a sandy, gravelly, or clayey bottom, destitute of trees, unless along some of the river banks, and covered partly with low shrubs, and partly with coarse grass, which affords in summer a scanty pasture. Here also there are numerous swamps and salt-marshes, and only the first stage of the ascent towards the Altai is capable of a rude cultivation. Between the Yenesei and Lena the country has more of an undulating character, is covered with forests of pine and birch, has finer pastures, but, in consequence of the cold, offers no facilities for agriculture. Eastward of this the surface becomes high, bleak, and only in sheltered situations affords a stunted growth of birch, willow, and pine; while all north of the Arctic Circle the country is one flat bog-moss or *tundra*, interspersed by lakes, frozen for ten months of the year, and even during summer the thaw does not penetrate beyond eight or ten inches.

2. *Central Asia*, lying principally between the 30th and 50th parallels—having the Altai and Iablonnoi Mountains on the north, the Himalaya and Hindoo Koosh on the south, the Khing-Khan and Yun-Ling ranges on the east, and the Highlands of Tartary on the west. This region comprises Mongolia, the Desert of Kobi, Thibet, and part of Tartary, and consists of a series of

ascending plateaux, diversified by mountain ridges, and intersected by valleys. That of Mongolia and Kobi, for example, is supposed to have an absolute elevation of not less than 3000 feet, with its ridges rising to 10,000 feet or upwards; that between the confines of China and Thibet is still more elevated, and more diversified by ridges; while that of Thibet consists of several steps, the lowest of which is said to have an absolute elevation of not less than 10,000 feet, and the highest from 12,000 to 14,000 feet. On the Tartary side the country again begins to fall, and is more diversified by sandy steppes, lakes, hill-ridges, and fine fertile valleys. The whole of the central table-land, however, must not be considered as bleak and monotonous desert; for although the higher ridges are covered with perpetual snow, and much of it is rugged and sterile, yet there are many plains affording good pasture, and sheltered valleys which produce grain, cotton, wine, and various fruits.

3. *Eastern Asia*, consisting of Mandshuria, China Proper, and the adjacent island of Japan; upon the whole, a low-lying and somewhat arid region, though traversed by several of the largest rivers in the world. Mandshuria is rather hilly and desert, particularly the parts towards the west and north; and the eastern coast is fenced by a rugged ridge which descends abruptly to the sea; but the interior is well-wooded, and though enduring a severe winter of four months, is capable of producing rice, cotton, and silk. China, on the other hand, is more uniform in surface, if we except the western provinces, which are intersected by numerous ramifications from the Yun-ling, Pe-ling, and other mountain-ranges. Eastward, towards the embouchures of the Hoang-Ho and Yang-tse-Kiang, the country assumes the character of an alluvial plain, extending from the 30th parallel to the Great Wall, a length of 700 miles, and ranging in breadth from 100 to 150 and 300 miles. Though part of this great plain is soft and marshy, yet, upon the whole, it is in a high state of cultivation and fertility, yielding rice, wheat, sugar, cotton, tobacco, and other produce.

4. *Southern Asia*, including Hindoostan, or India within the Ganges; and Birmah, Siam, Laos, Annam, and Malaya, or India without the Ganges. This is decidedly the finest region of Asia, is diversified by minor hill-ranges and well-watered valleys, enjoys a high, though not an oppressive temperature, has only a rainy season for its winter, and except during long droughts, presents in every district an unfailing verdure. India without the Ganges consists of a curious alternation of parallel ridges and valleys—the former rising to no great height, unless in the north; and the latter rather narrow, but of great fertility, though liable to inundations during the rainy season. India within the Ganges exhibits greater diversity: the plains of the Indus and Ganges (including the *Punjaub*, or district between the five tributaries of the former, and the *sunderbunds*, or alluvial delta of the latter) exhibit well-marked features of tropical verdure and fertility; but there are also large sandy or gravelly deserts between those plains doomed to utter barrenness. South of those plains the country becomes hilly, and passes in the Deccan, or peninsular part, into a high dry table-land, fenced by the Eastern and Western Ghauts, and rendered irregular in surface by the Nilgherry and other hills.

5. *Western Asia*, which, with a few minor exceptions, may be said to consist of high sandy plains, studded with salt lakes, very inadequately watered by rivers, and, on the whole, a hot and arid region. It embraces Arabia, Turkey, Persia, Beloochistan, Affghanistan, and South-Western Tartary; the minor exceptions to the general character being the hilly districts of Affghanistan, Georgia, and Western Turkey. The desert steppe of Western Tartary is of no great elevation, skirts the whole of the Caspian, and passes insensibly into that sandy tract already described under Russia in Europe, p. 208. The table-land, or rather table-lands of Persia, are of varied character—high (5000 feet), rugged, and cold in the north-east; descending to 3000 feet a little farther south; and in the central and southern parts spreading out into sandy, gravelly plains, from 1200 to 2000 feet high, only partially intersected by narrow valleys in the west, and stretching into the arid moving deserts of Beloochistan in the east. Turkey is more diversified than any other part of Western Asia; has several high ranges, the peaks of which are above the snow-line; a number of fertile valleys; a few rather bleak and elevated table-lands; some sandy and brackish tracts in the south; and the large low alluvial valley of the Tigris and Euphrates in the south-east. Arabia is altogether a high isolated table-land, consisting principally of arid, sandy desert, interspersed with hilly ridges and narrow shrubby valleys—unknown to all save the wandering tribes, who find a scanty subsistence on its plains.

GEOLOGICAL STRUCTURE.

The geology of Asia is very imperfectly known: nothing like a general sketch of the succession and relation of its formations has been, or indeed can yet be, attempted. All that we know for certain is, that most of its great plains are of very recent formation; that active volcanoes are still within its limits; that its tertiary and post-tertiary deposits have, at no very distant date, been subjected to volcanic forces; and that almost all the older formations have been noticed at isolated points by successive travellers. Thus the great plain of Siberia consists of post-tertiary clays, gravels, and sands, in which the remains of elephants, rhinoceroses, and other huge animals, no longer existing there, are found in abundance; the great plain of China is strictly alluvial, and still in course of formation; so likewise are those of the Ganges and Indus; and the sandy tracts of Arabia and the west, with their petrified woods and nummulite limestones, point to a comparatively recent elevation from the waters of the ocean. The depressions of the Dead Sea, Caspian, Cutch, &c. point also to recent geological changes; while the mountain-ranges and table-lands—already described under PHYSICAL GEOGRAPHY, vol. i., p. 57—seem to have been cold and permanent for ages.

Economically, *coal* is found in the north of China, in Syria, and in Hindoostan; *salt* in China, Hindoostan, West Siberia, Persia, Arabia, and Turkey; *marble* in Turkey; *asphalte* in Syria, Persia, and the Caspian; *gold* in Japan, China, west borders of Siberia, Birmah, and the Malayan Peninsula; *silver* in China, Japan, West Siberia, and Turkey; *tin* in China, Birmah, Siam, and the Malayan Peninsula; *quicksilver* in China, Thibet, Japan, Hindoostan, and Ceylon; *copper* in Japan, West Siberia, Thibet, Turkey, India, and Persia; *iron* in the Oural, India, China, Siam, Japan, Turkey, Persia, and Affghanistan; *lead* in China, the Oural, Turkey, Georgia, Persia, Siam, and Japan; and *precious stones*, including the diamond, in India, the Oural, Chinese Empire, and Persia.

HYDROGRAPHY, &c.

The *seas*, *bays*, and *gulfs* which indent and intersect the surface of Asia are in many respects peculiar, but in noway so remarkable as those which give character to Europe. On the *north* the Gulf of Obi, a large shallow basin, for ten months in the year covered with ice, is the only important inlet. On the *east* the large and little-known sea of Okhotsk; the island-surrounded Sea of Japan, with its volcanic coasts; the basin of the Yellow Sea, and its subordinate Gulf of Petchili, so shallow, that there is scarcely six fathoms of water 100 miles off shore; the Gulfs of Tonquin and Siam. On the *south* the Gulf of Martaban; the large open Bay of Bengal, terminating in the numerous navigable mouths of the Ganges; the Persian Gulf, celebrated for its pearl fisheries, about 550 miles long, and 150 in breadth, connected with the Gulf of Oman by a strait 50 miles across; the Red Sea, with its numerous islets and reefs, 1420 miles long, average breadth 135—terminating in the small Gulfs of Suez and Akaba; the former 180 miles by 22, the latter about 120 by 13.

The principal *straits* are those of Bab-el-Mandeb,

forming the entrance to the Red Sea, less than 20 miles across; Palk's Strait, between Ceylon and the mainland of Hindoostan; Straits of Malacca, forming the highway between the Indian and China Seas, about 520 miles long, and from 25 to 180 broad; the Channels of Fokien and Formosa, on either side of that island; the Straits of Corea and La Perouse, running between Japan and the mainland of the continent; and Behring's Straits, separating Asia from America, at its narrowest part not exceeding 36 miles.

The *islands* more immediately connected with Asia are the Liakhov group in the Arctic Ocean; the Aleutians in the Sea of Kamtchatka; the islands of Japan; Saghalien, Formosa, Hainan, and Chusan off the coast of China; Ceylon, the Andaman and Nicobar Isles in the Indian Ocean; and Cyprus in the Levant. The Japan Isles, forming the empire of that name, consist of Niphon, Yeso, Kiuslu, Sikoke, and the Kuriles, altogether occupying an area of 266,600 square miles, of volcanic origin, subject to destructive earthquakes, of average fertility, rich in minerals, and peopled by a busy and ingenious people. The fine island of Ceylon, now a free colony, has an area of 24,500 square miles, and whether as regards its vegetable, animal, or mineral produce, is one of the most valuable of the British possessions. [The large islands of Sumatra, Java, Borneo, Celebes, &c. generally known as the East India Islands, are treated under the head MALAYSIA in a subsequent number—68, p. 281.]

The *lakes* or *inland seas* of Asia constitute one of its peculiar features, most of these being salt or brackish, having no visible outlet, and in some instances considerably beneath the general level of the ocean. The largest of these is the Caspian, having a length of 760 miles, with an average breadth of 200, receiving the rivers Wolga and Oural, but with no outlet; its waters brackish, and of unknown depth, and its surface-level fully 116 feet beneath that of the Black Sea. Next is the Sea of Aral, about one-fifth of the size of the Caspian, with brackish or bitter water, receiving the streams of the Jyhoun and Sihon, but having no river of discharge. Of the same character are the smaller lakes Tenghiz, Khasselbach, Oubsa, Koko, Bosteng, &c.—all in the high central plateaux; and Van, Ourumia, Koch-Hissar, the Dead Sea, and others in West Asia—the last being not less than 1312 feet beneath the level of the Mediterranean. Of fresh-water lakes with outlets, the principal are Baikal in Siberia, 400 miles long, and from 40 to 60 broad, abounding in seals and fish; Tchang, formed by the Irtish; Erivan in Armenia; Tongting, Poyang, and Hai in China; and Tabaria in Syria, 328 feet beneath the Mediterranean.

Of the *rivers* which water the continent, a large number are of the first class; and others, though of minor volume, become interesting from their historical associations. The bleak regions of the north are traversed by the Obi, with its large tributaries Irtish and Tobol, by the Yenesei, the Lena, and Indigirka—all of which fall into the Arctic Ocean, and, from being frozen for so many months, are of little use to internal communication. In Eastern Asia we find the Amour, Hoang-ho, Yang-tse-kiang, and Hong-kiang, all of which are slow flowing rivers, and navigable for a long way into the interior. India without the Ganges is watered by the rapid but little-known rivers Camboja, Meinam, Thaleain, and Irawady; and Hindoostan by the Brahmapoutra, the 'sacred' Ganges, and not less celebrated Indus, with its classical tributaries Sutluj, Ravee, Chenab, and Jelum. The Ganges, though subject to annual inundations, and to a very rapid and dangerous tidal bore, is one of the most valuable rivers in the world, being, with most of its tributaries, navigable to the very basis of the mountains. The same, however, cannot be said of the Indus, which, though of ample volume, has an obstructive and shifting delta, which renders it of little avail, unless to small steamers. In Western Asia are the Tigris and Euphrates—the latter, as has been recently proved, navigable for flat-bottomed steamers so high as Bir.

CLIMATE.

The climateric effects have been already adverted to, in a general way, under the description of the respective regions; but there are certain specialities which require consideration. As a whole, the continent of Asia does not enjoy the same modifying and mollifying influences as Europe. A large proportion is situated on the confines of the Polar Circle; a still larger section raised to an enormous altitude: it lies comparatively unbroken by intersecting seas; it has no burning sandy tracts on the south to send warm breezes, as Africa does, to Europe; while even its southern tropical districts are cooled by currents from the snow-clad central plateaux. It therefore suffers what Humboldt calls an *excessive* climate—that is, excessively hot in summer, and excessively cold in winter, or differing greatly during these seasons from the mean annual temperature. Thus excellent grapes come to maturity on the borders of the Caspian, and yet the thermometer in winter falls to —28° Fahrenheit. At Tara in Siberia the temperature of the air in July and August rises to 82°, and yet a few inches under the surface the soil remains perpetually frozen. The snow-line in the Elburz is found at 11,000 feet, on the south side of the Himalaya at 12,000 feet, and yet in Thibet the mountains are clear at an elevation of 16,000 feet. In Arabia, after a night of hoar-frost, the day-heat is often as high as 114°. At Bombay the mean annual temperature for 1844 was 81½°—being in January 75°, February 76°, March 79½°, April 84°, May 86°, June 85½°, July 82°, August 81½°, September 80½°, October 83½°, November 80½°, and December 79½°; the greatest cold experienced being 55½° in January, and the greatest heat 92½° in May. The *wet* season in the same year—that is, June, July, August, and part of September—yielded, by rain-gauge, upwards of 66 inches of rain.

BOTANY AND ZOOLOGY.

The *vegetation* of Asia, as might be expected from its varied climate, soil, altitude, and other physical causes, is more abundant and diversified than that of any other region. The general features have been already adverted to under the different regions into which we divided the continent; but in addition to these we may notice the following as more especially characteristic:—Of *forest trees*—the teak, cedar, sycamore, cypress, savin, mangrove, bamboo, banyan, plantain, cocoa, and a variety of other palms, besides aloes, ebony, ironwood, rosewood, sandalwood, and other ornamental hardwoods. Of *fruits*—the grape, orange, shaddock, lemon, lime, tamarind, mangosteen, mulberry, olive, pomegranate, walnut, almond, cocoa, bread-fruit, cashew, betel, banana, pine-apple, melon, quince, date, apricot, and all the garden fruits known in Europe. Of *spices* and kindred trees and shrubs—cinnamon, nutmeg, clove, camphor, cassava, tea, coffee, cotton, sugar-cane, sago-palm, &c. Of *grains*, cultivated *roots*, &c.—rice, wheat, dhourra, maize, barley, pease, beans, lentils, and other leguminosæ; potato, yam, lotus, arrowroot: of plants yielding *drugs* and *dye-stuffs*—indigo, arnatto, saffron, gamboge, galls, poppy, rhubarb, castor-oil, sarsaparilla, ginseng, and many others.

Of the *animals* characteristic of Asia, we may enumerate among the *mammalia*—the apes and monkeys of the south; the elephant and rhinoceros of India; the lion, tiger, leopard, panther, ounce, and other felinæ in the south and west; the wolf, jackal, blue and black fox, and numerous varieties of the dog; the horse, ass, and dzigguetai of Arabia; the common ox, buffalo, auroch, yak, and musk ox; the elk, reindeer, axis, argali of Siberia, Angora goat, ibex, moufflon, and fat-tailed sheep; porcupine, jerboa, curious bats, marmot, lemming, beaver, ermine, &c.; bears, badgers, gluttons, sea-otters, seals, morses, manati, and other cetacea. Among *birds*—the peacock, pheasant, white partridge, and innumerable pigeons; eagle, vulture, falcon; parrots, paroquets, macaws, &c.; stork, heron, cormorant, pelican; birds of paradise, and others of gay

plumage; but very few songsters. *Reptiles*—alligators in the Indian rivers; boa constrictor, python, and a number of deadly serpents in the jungle; edible turtle; lizards, toads, and frogs. *Fish*, of every kind and hue, in all the rivers, lakes, and seas, including sharks, sturgeons, flying-fish, &c.; *shells* of the rarest beauty and elegance; and *insects* in innumerable species—some useful, as the silkworm, bee, and those producing cochineal, gall-nuts, lac, &c.; and others destructive and poisonous, as the locust, scorpion, and mosquito.

POPULATION—INDUSTRY, &c.

The *inhabitants*, usually estimated at 400,000,000, belong to the three great varieties—Caucasian, Mongolian, and Malay; but these, in the course of time, have broken into a number of distinct families, races, and tribes, which are extremely puzzling to the ethnologist. Without attempting any formal division, the *first* variety may be regarded as including the Circassians, Georgians, Armenians, Syrians, Arabs, Persians, Affghans, and Hindoos in the west and south; the *second*, the Tartars, Turks, Kalmucks, Mongols, Thibetans, Mandchoos, Japanese, Chinese, Birmese, and others of the central and eastern countries; and the *third*, the Malays, Macassars, &c. chiefly in the south-eastern peninsula. Or, more generally still, the Hindoos, Chinese, Tartars, Arabs and Persians, may be said to divide among them the continent as an inheritance, giving to it languages, religions, laws, customs, and civilisation. Besides the Asiatics Proper, there are a considerable number of Europeans located in different countries—as Russians in Siberia, Greeks in Turkey, British, French, Portuguese, and Danes in India. The prevalent *religious* creeds are—Mohammedanism in Turkey, Arabia, Persia, Affghanistan, Beloochistan, and parts of India; Brahminism and Bhuddism in India; Bhuddism in the Chinese Empire, Birmah, Siam, and the East; Idolatry or Feticism in Eastern Siberia; and Christianity in several forms in Turkey, Western Siberia, and European India.

As regards *civilisation*, whatever may have been the condition of Syria, Persia, India, and other celebrated nations of antiquity, the continent of Asia is now, with a few fractional exceptions, in a state of semi-barbarism and stagnant imbecility. Siberia has yet reaped little from Russian influence, and is for the most part physically incapable of doing so: Tartary, Thibet, Mongolia, and the whole of Central Asia, are occupied by nomadic races, whose flocks and herds constitute their sole wealth and subsistence; China and Japan, though possessing a literature, laws, and religion, though their people dwell in cities, cultivate the soil with exactitude and care, and exhibit considerable skill in the domestic arts, are little, if anything, in advance of what they were several centuries ago, being destitute of that elasticity and adaptive capacity essential to a progressive civilisation; India without the Ganges is still far from being entitled to be ranked with civilised nations; Hindoostan, with its numerous races, and once independent states, is morally and industrially, as well as politically, dead—all that British influence has yet effected being trifling in comparison with the field before it; the Affghans and Beloochees are rude, half-pastoral, half-agricultural, warlike races, only as yet in the second stage of civilised existence; Arabia and Persia have been dormant, if not retrograding, for centuries; and even Turkey, with its fertile soil, fine climate, and varied produce, is by no means entitled to be ranked with the European section of the empire of which it forms a part.

The *industrial* and *commercial pursuits* of a continent so little advanced in civilisation must necessarily be of a humble and limited description—directed more to the rearing and collecting of raw produce for export, than to the arts and manufactures. Mining constitutes the chief industrial feature in Western Siberia; the Chinese rear tea, cotton, silk, and rice, manufacture silk and cotton stuffs, porcelain, firearms, gunpowder, books, and toys, and carry on a considerable coasting trade;* the Japanese are celebrated for their lacquered wares; India for her silk, cotton, rice, indigo, opium, coffee, and other raw produce, her handanas, crape shawls, and similar manufactures in silk; Cashmere for its exquisite shawls; Persia for carpets; Arabia for its coffee and spices; Turkey chiefly for her abundant and varied raw products, and in less degree for her sword blades, damask silks, and interior caravan commerce.

COUNTRIES AND GOVERNMENTS.

The native governments of Asia are generally despotic, tempered, however, by their religious creeds and patriarchal customs. The political divisions are exceedingly unstable; for which reason we merely exhibit the countries, with their areas, population, and chief towns, devoting the remainder of our sheet to an account of the East Indies, that section of Asia in which the British reader is more especially interested:—

Countries.	Sq. Miles.	Population.	Chief Towns.
Siberia, - - -	5,700,000	7,600,000	Tobolsk.
Chinese Empire,	5,400,000	184,000,000	Pekin.
Japan, - - -	120,000	12,000,000	Jedo.
Tartary, - - -	750,000	7,000,000	Turkestan.
Turkey, - - -	460,000	13,000,000	Smyrna.
Arabia, - - -	1,000,000	10,000,000	Mecca.
Persia, &c. -	510,000	13,000,000	Teheran.
Affghanistan, -	250,000	5,500,000	Cabul.
Beloochistan, -	200,000	5,000,000	Kelat.
Hindoostan, - -	1,260,000	121,500,000	Calcutta.
Farther India,	902,000	21,000,000	Amarapoura.
Total, - -	16,032,000	390,000,000	

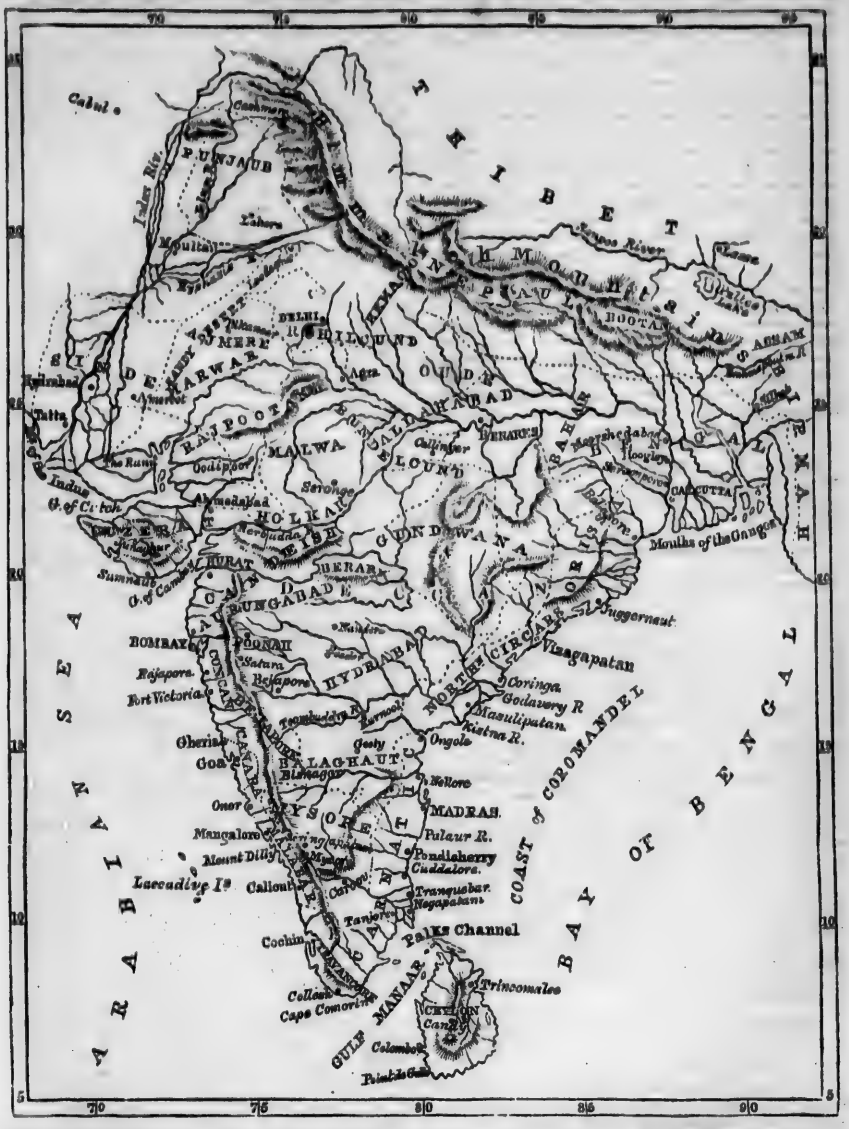
The European powers having possessions in Asia are—*Russia*, occupying the whole of Siberia, partly as a mineral and trading region, and partly as a penal settlement: *Britain*, which has acquired the ascendancy, if not the actual possession, of the most of Hindoostan, Ceylon, Assam, Chittagong, various settlements on the Birmese and Malayan coasts, the valuable little island of Sincapore in the Straits of Malacca, the islet of Hong Kong at the mouth of the Canton river in China, and the rocky peninsula of Aden in Arabia: *France*, which owns the small districts or factories of Pondicherry, Villenour, Chandernagore, Gonjam, Carical, Mahé, &c. on the coasts of Hindoostan: *Portugal*, which still possesses the maritime districts of Damaun, Diu, Goa, and Marguon: and *Denmark*, which, since the British purchase of Serampore in 1846, has only the small territory and seaport of Tranquebar in the Carnatic.

Note.—The following descriptive words are of frequent occurrence:—In China the termination *foo* denotes a town of the first class; *tcheou*, one of the second; *hien*, one of the third; *hou*, lake; *ho*, river; *kiang*, river; *keou*, mouth. In Hindoostan—*abad*, dwelling or city; *poor*, *pore*, *puram*, town; *patam*, town; *droog*, fort; *gur*, *ghur*, castle; *bazar*, market-place; *cherry*, city; *nagore*, *nuggur*, town; *serai*, inn; *cot*, *colla*, fort; *war*, *warra*, region; *stân*, a country; *giri*, mountain; *gherry*, hill; *ghaut*, mountain-pass; *ab*, *aub*, water or river; *jeel*, shallow lake; *maha*, great; *nil*, blue; *diva*, *dive*, island. In Persia and Arabia—*jebel*, hill; *nahr*, river; *ras*, cape; *hissar*, fortress; *meshed*, mosque; *dek*, village; *kasr*, castle; *gherd*, fortress; *kuh*, mountain-peak; *bostan*, garden; *tagh*, *dagh*, mountain. In Palestine—*ain*, *en*, fountain; *baal*, temple; *bahr*, sea or lake; *beth*, house or dwelling; *kirjath*, city; *ramah*, high ground; *wady*, valley. In Turkey—*dagh*, *tagh*, mountain; *koom*, desert; *denghiz*, *dengis*, lake; *chai*, river; *pol*, *poli*, city; *grad*, *grade*, fortress; *shehr*, town; *serai*, palace; *kelissa*, *kelisch*, church; *khan*, inn; *hissar*, castle; *koi*, *koi*, village; *bazaar*, *bazar*, market; *eski*, old; *novi*, *neo*, new; *yeni*, young; *bala*, upper; *buyuck*, great; *jik*, *kutchuk*, little; *ak*, white; *kara*, black; *kizil*, red.

* The superior industry of the Chinese, as compared with other Asiatic nations, is proved by their extensive exportation of *manufactured* articles. To those above enumerated we may add—alum, white and red lead, brass leaf, zinc, glass-beads, paper-hangings, table and floor mats, &c. Besides exporting native productions, China is also an entrépôt for those of the adjacent countries, and occasionally even for those of Europe.

EAST INDIES.

India, Hindoostan, or the East Indies, as it is called, to distinguish it from the West India Islands, is, as may be seen by the accompanying maps, an extensive triangular-shaped territory, pointing with its narrow extremity southward to the Indian Ocean. It is nearly comprehended between the latitudes of 8° and 35° north; its extreme length from north to south is about 1900 miles, and from east to west about 1500; its superficial area



measures 1,260,000 miles. The northern boundary of this extensive region is formed by the Himalaya Mountains, so called from an Indian word signifying snow—their peaks, at an elevation of 16,000 feet or thereby, being perpetually clothed with ice and snows. From the extremities of this mountain-chain flow two large rivers, which form on either side the boundary of India; that on the east is called the Burhampooter or Brahmapoutra, and that on the west the Indus—a river from whose name the whole country has derived its present designation. Each of these streams, with its tributaries, water an immense tract of fertile country, and afford excellent means of internal trade to the people situated on the banks. From the mouths of

these rivers the coast stretches both ways to the southward, the eastern and western side inclining to the same point, so as to meet at Cape Comorin. Beyond this, the adjacent island of Ceylon extends a little farther, and reaches to within about 6° of the equator.

This extensive country presents, as already stated, a great variety of surface, being diversified in some places with wide sandy deserts; in others with fine undulating hill countries, well watered and fertile; a third portion consists of flat high-lying regions, called table-lands, which, from their height above the sea, are cool and temperate; and a fourth division consists of immense fertile plains, watered by the large rivers of the country, and their numerous tributaries. A considerable portion of the low-lying country is of a marshy shrubby character, called jungle, and unfitted for cultivation. Each of these divisions of India presents an aspect peculiar to itself, and all of them are distinguished by natural productions, both plants and animals. Besides the Indus on the west, and the Brahmapoutra on the east, there are other large and important rivers descending from the outskirts of the Himalaya Mountains, or from ranges of hills called Ghauts, and descending to the sea both on the east and west coasts. The principal of these streams is the Ganges, which, with its tributaries, drains a large portion of the north-east division of the country, and enters the sea in the province of Bengal, along with the conjoined waters of the Brahmapoutra. The valley or plain of the Ganges, and the valleys of its confluents, form the fairest and richest portion of Hindoostan.

Territorial Divisions.

The modern territorial and political subdivisions of India, though of little practical moment, may thus be specified:—First, NORTHERN HINDOOSTAN, an extensive and rugged territory, comprehending—

1. The country between the Sutluj and Jumna.
2. Gurwal or Serinagur.
3. Sources of the Ganges.
4. Kemaoon.
5. Painkhandi.
6. Bootan.
7. Dominions of Nepaul.

Second, HINDOOSTAN PROPER, which is the most comprehensive division. It stretches across the centre of India, and obtains the most prominent place in the history of the old Mohammedan empires of India. It reaches south to the Nerbudda, where the Deccan commences, and includes the following provinces:—

1. Bengal.
2. Bahar.
3. Allahabad.
4. Oude.
5. Agra.
6. Delhi.
7. Lahore.
8. Cashmere.
9. Ajmeer.
10. Moultan.
11. Cutch and Guzerat.
12. Malwa.

Third, THE DECCAN.—This division lies next, in a southerly direction, to the above, extending from the Nerbudda river on the north, which flows into the sea on the west coast, to the Kistna, a river flowing into the sea or Bay of Bengal on the east coast. Between these rivers lies the Deccan, a much less fertile division of India than the preceding; Bombay, a small island on the west coast, belongs to the province of Aurungabad in this division. The Deccan comprehends the following provinces, a portion of which formed the once famous Mahratta empire:—

1. Gundwana.
2. Orissa.
3. The Northern Circars.
4. Candeish.
5. Berar.
6. Beeder.
7. Hyderabad.
8. Aurungabad.
9. Bejapore.

Fourth, INDIA, SOUTH OF THE KISTNA.—This division forms the extreme southerly portion of the Indian peninsula, and comprehends the provinces of—

1. Canara.
2. Malabar.
3. Cochin.
4. Travancore.
5. Balaghaut, ceded districts.
6. Mysore.
7. Coimbatoor.
8. Salem, and the Barramahal.
9. The Carnatic, in which is situated Madras.

In addition to the foregoing divisions and provinces, the large territories of Ava and the Burmese empire, lying east from the Brahmapoutra, are now attached to India, besides other conterminous regions.

It is customary to speak of the preceding provinces and states as British, Tributary, or Protected and Independent, but such a distinction is upon the whole rather nominal than real. British influence now pervades the whole region, from the Himalayas to Cape Comorin on the one hand, and from the Indus to the Ganges on the other; and as for any individual or separate power which the Protected States can exercise, they might as well be termed British, while the really Independent territories, as Scindia, Nepaul, and the Punjaub, are gradually being reduced under British sway. How little of Hindoostan, territorially speaking, does not now acknowledge the supremacy of British power, may be seen at a glance by referring to any coloured map of the country.

Modern History.

What was the original political condition of the vast territory now composing the British Indian empire, it would be needless to detail minutely. Like other portions of Asia, it was early inhabited by a primitive people, more or less barbarous, professing different pagan religions, and speaking many more different languages. The principal religion, however, was Hindooism, to which we shall afterwards allude; and it has been said by some historians that the early Hindoo race of inhabitants manifested many symptoms of civilisation, and even a knowledge of some of the sciences. However this may have been, the inhabitants generally were in some measure an industrious, but simple race, and little inclined to war. Reasoning from what has occurred in their history, as well as from the information communicated regarding them, they seem, from the earliest times, to have had little or no care with regard to who ruled over them, provided they were insured in the possession of their ancient religious usages, and their system of living in small communities, under a simple species of local government. They were reckless of what sovereign was placed over them, or to what dynasty they were transferred, so long as the internal economy of their village districts remained the same. This species of political apathy produced the results which might have been expected. From the most remote period of which any record is preserved, the inhabitants of India, including those tribes which possessed more decided warlike propensities, or who had the spirit to resist aggression, were subjected to the government of strangers, who seized upon their territories, and made them the objects of taxation.

Of the remoter period of Indian history little is correctly known; all that may be said of it is, that both the Greeks and Romans were supplied with some of their articles of luxury from Hindoostan, and that for many centuries this Eastern clime was supposed, by the ill-informed inhabitants of distant parts of Asia and Europe, to be the richest and most sumptuous country on the globe. The tales related of Indian grandeur appear to have in time excited the avarice and ambition of Mohammedan or Saracen chiefs. The first of this barbarous, though intrepid race who made a successful inroad upon India was Mahmoud, sultan of Ghuznee, or Affghanistan, a kingdom on the north-west of India. Mahmoud commenced his successful expeditions into India about the year 1000, and he continued them till 1024, making the destruction of pagan idolatry more the object of his visits than the acquisition of wealth or power. In this period of twenty-four years he had subdued a considerable number of the native princes, and notwithstanding his professions, exacted immense tributes in gold and every kind of valuable commodity. A successor of Mahmoud, named Mohammed, after carrying on war with the Indian princes for some time, at length, about the year 1193, entered Hindoostan with an exceedingly large force, and bore down all opposition. The king of Delhi was slain in battle, and having advanced to that ancient capital,

Mohammed there left a viceroy to maintain his authority. In this manner a Mohammedan dominion was for the first time established in the heart of India, and in one of its greatest cities; and thus commenced the Affghan or Patan sovereigns and their dynasty.

The dynasty so planted continued in existence for rather more than 300 years, when, in 1525 or 1526, it was subverted by Baber, who was considered one of the most adventurous warriors of his time, and who, like his prototype Mohammed, was of the Moslem faith. Baber was either descended from a Mogul or Tartar chief, or in some way, not clearly explained by historians, connected with a race called Moguls, who assisted him in his attempts upon India; and from causes of this nature, the empire which he founded in Hindoostan has ever since been called the Mogul empire. From the year 1526, a series of Mohammedan emperors, whose seat of authority was at Delhi, ruled the largest and finest portions of India. By them the country was in many places newly subdivided into provinces, and put under the government of tributary kings or nabobs, who superseded the Hindoo rajahs or petty princes. One of the greatest of these Mogul emperors was Akbar, who flourished between the years 1556 and 1605. By his daring and judicious management the central provinces were preserved in complete tranquillity, and Guzerat, Bengal, and part of the Deccan, were added to his already extensive empire.

While the emperors of India were thus establishing their power, multifarious schemes were formed in Europe for getting possession of some of the wealth, if not some portions of the territory, of Hindoostan. The commodities of Indian manufacture or produce were hitherto imported into the European states only by means of tedious overland journeys, or partly by the Red Sea, and were endangered in their passage by the attacks of ferocious Tartar and Turkish tribes. The discovery of a new and safe road to India thus became a matter of very great consequence. A route by sea round the Cape of Good Hope was at last found by the Portuguese, who, under the command of Vasco de Gama, in 1498, landed in Hindoostan, on the coast of Malabar, where they at once established themselves. The whole commerce of the East Indies was now in the hands of the Portuguese for nearly a century—and this was the golden age of Portugal. Lisbon became the great depôt of Indian spices and other commodities, greatly to the envy of the Dutch and other nations. Portugal was united to Spain in 1580; the Spaniards oppressed Holland, and caused it to revolt; this revolt was followed by the capture of the Dutch ships trading to Lisbon; and this capture compelled the Dutch to engage in a direct trade to India. The English soon followed their example. The political and spiritual tyranny of the Portuguese in India, as well as the abuses which they permitted in commerce, gradually subverted their power, and divested them of respect. The Dutch and English, therefore, found everything in that state of division which is favourable to the establishment of a third party. The Dutch established an East India Company in 1602, and a prosperous trade was thereafter carried on. The Dutch adopted quite a different line of policy from that of the Portuguese in their transactions with India. They cared nothing about the religion of the Hindoos, and set up no inquisition to force Christianity on those they dealt with: all they wanted was commercial intercourse, and their excellent management soon secured them a large share of the Indian traffic. They possessed themselves of Batavia, in the island of Java; in 1641 they acquired Malacca, the capital of the Portuguese East Indies; they subsequently acquired the Cape of Good Hope for a settlement; and these colonies were a great assistance to the intercourse between Europe and India. The Dutch subsequently acquired a number of other possessions in the East; but most of these came afterwards into the possession of the British.

We now enter upon the history of the rise and progress of the British power in India. The English became animated with a desire to open a commercial intercourse with India as early as the reign of Edward VI. (1553); but their expeditions failed in reaching the desired country, from their want of geographical knowledge: and it was not till the shutting of Lisbon against the Dutch, that they were so far excited as to persevere in their maritime attempts till they were successful. They at length learned which was the true course to steer for India; whereupon, in 1600, a company of merchants was formed in London to prosecute the traffic with the East; being empowered to do so by a charter from Queen Elizabeth, which was to last fifteen years. The first expedition of these adventurers cost £69,091, and consisted of five ships, the largest of which was 600, and the smallest 130 tons burthen. The articles which they took were principally bullion, iron, tin, broadcloths, cutlery, and glass. This expedition proved remarkably successful, and led immediately to a repetition of annual voyages of the same nature. This early trade was nevertheless considerably hampered by the Portuguese; and it was found necessary to try to secure the favour of the Mogul emperor. In 1607, therefore, Captain William Hawkins was sent out by the Company, to endeavour, if possible, to open a commercial intercourse with the dominions of the Mogul. Hawkins, after surmounting great difficulties, placed in his way by the Portuguese, reached the court of the Mogul emperor Jehangire, son of the famous Akbar, already mentioned. This visit was unfortunately of no avail, from the pernicious interference of the Portuguese Jesuits; and another English mission, on a greater scale, and from the king, was sent forth in 1615. This embassy, which was conducted by Sir Thomas Roe, proved more successful in securing the favour of the Mogul, but did not lead to any important results. The affairs of the Company, nevertheless, continued prosperous, and factories were in many places planted on the coasts of India. These factories were warehouses for the reception of native produce, and the storing of imported goods from England, and were no doubt of considerable use in the objects of their establishment. From the real or pretended dread of being attacked by marauders, the keepers, merchants, and servants at these places, at length began to strengthen the defences; and so, from being mere mercantile warehouses, the factories shortly partook of the decided character of armed garrisons.

It does not appear that the native powers of India took any active measures to prevent this insidious process of planting settlements. The natives were fond of dealing with foreigners, and the princes were so eaten up with jealousy of each other, that the British always contrived to gain the friendship of one by taking part against another, and in the end getting the advantage of both. Besides, it was not for some time that the British disclosed any intention of securing the jurisdiction of provinces, or a property in the soil. A watchful hypocrisy led them to yield on all occasions a reverence towards the political sway of the native emperors, rajahs, and nabobs. The original East India Company, with its charters at different times disputed and renewed, continued throughout the seventeenth century to carry on a profitable traffic with the East. Its factories were extended to Java, Sumatra, Borneo, the Banda Islands, Celebes, Malacca, Siam, the coasts of Malabar and Coromandel. In 1640, the native authorities gave permission for the building of Fort St George at Madras; and in 1645, a factory was established on the banks of the Hoogly, a branch of the Ganges near its mouth, which formed the foundation of Calcutta. The island of Bombay was also procured as a settlement in 1664–5, after a struggle with its Portuguese possessors. The affairs of the Company were not, however, in a prosperous state; and soon after the Revolution of 1688, the question of the validity of the old royal charter was started. The consequence followed of the Company not being able to perform its obligations, on account of losses occasioned by wars, infidelity of officers, extravagance, &c.; and

parliament in 1698 granted a charter to a new East India Company, on condition of a loan of £2,000,000 sterling to the state, and which was required to carry on King William's wars. But the great contentions between the two Companies soon made it necessary to unite them, and a union was effected in 1702, when an act of parliament was passed, establishing the conjoined association under the title of the United Company of Merchants trading to the East Indies. Stock was raised by the sale of shares, and the shareholders to a certain amount were entitled to elect directors.

The progress of the Company's settlements in India was on several occasions about this period caused by the superior skill of the British in medicine. In 1715, an embassy being sent on a commercial commission to Delhi, it happened that a medical gentleman named Hamilton, who accompanied the factors, had the good fortune to cure the Emperor Feroksere of a severe illness, which could not be overcome by the ignorant native physicians. In gratitude for this important service—though, it is likely, some very valuable presents from the Company had an equally liberalising effect—the emperor granted liberty to the Company to purchase in Bengal thirty-seven townships in addition to that of Calcutta; he also conferred upon them some important commercial privileges, which soon rendered Calcutta a flourishing settlement. The charter of the East India Company was from time to time renewed during the eighteenth century, though (but not without great difficulty) against a powerful opposition. But loans to government carried them always through these embarrassments. In 1744 they advanced £1,000,000 at 3 per cent., in consideration of an extension of their privileges till 1780. Hitherto we have seen this company of English merchants acting only for the avowed object of commercial intercourse with India; we now enter upon a new page in their history, and show the origin of their political power.

The East India Company assumed the qualifications of a military and political power in the year 1748. But their advances towards territorial dominion were retarded by a rival, which gave them no small trouble. This competitor was France, which had in the meantime hastened to share in the commerce and spoils of India. In 1746, a French battalion had destroyed the army of the nabob of the Carnatic, and soon after the French officers succeeded in disciplining Indian troops according to the European method. The inferiority of the native Indian troops opposed to European soldiers, and the facility of instructing Indian soldiers, known by the name of *Sepoys*, in the European tactics, was thus proved. Ambition and avarice, political and mercantile cunning, could now act on a larger scale; and the independence of the Indian princes was gone whenever this trading Company, which was already encroaching upon all the rights both of the rulers and the people of these countries, should establish a permanent military force. Thus far the military organisation of the Company had been merely on the defensive; it now became able to act offensively; and the entire difference of the European and Indian notions of law could never fail to furnish opportunities to put this new means of power into action. The rights of succession, and all the rights of princes, subjects, and families, were so much disputed on the different principles of the Indian, Mohammedan, and British laws, that the Company, which often interfered as arbitrator, easily succeeded in extending their legal jurisdiction. If called to account in England for any of its undertakings, it was easy to uphold the correctness of its conduct, politically, on the ground of self-defence, which, at the distance of several thousand miles, could not be called in question; and in legal matters, by taking advantage of the impenetrable labyrinth of the law. Edmund Burke, who experienced, in the case of Warren Hastings, the head of the Company's affairs in the East, this impregnability of the association, accused them justly 'of having sold every monarch, prince, and state in India, broken every contract, and ruined every state who had trusted them.' In 1749, the robberies of the Company began with the protection of the pretender of Tanjore, a fine province of the Carnatic. Under pretence of illegitimacy, the nabob of this district was driven out for the purpose of obtaining some cessions of territory, and then restored on making further concessions. The rapid progress of the Company in the art of extending their possessions, appears from their treaties with Surajee-Dowlah, the nabob of Bengal, whom they contrived to depose in 1757, when large and rich provinces were the reward of their faithless policy. The French, who, in a similar manner, had acquired considerable territorial possessions in the Carnatic, now came into collision with the British merchants, and a hot war was carried on in India between these contending Europeans. The indecency of this conflict, as to which party should be the greatest robber, seems to have shamed both France and England, and commissioners were mutually sent to India to reconcile the differences which existed, as well as to check the acquisition of territory either by the English or French Companies. As a matter of course, this affectation of justice ended in nothing. After the commissioners had agreed that each should restore its acquired territories, and after a 'solemn' treaty to that effect had been arranged, hostilities commenced as before. It would be needless to recount the particulars of this struggle for power; it will suffice to state that the French ultimately were deprived by the British of their possessions.

By the defeat of the French forces in 1761, the British were left at liberty to pursue their schemes on India, being in no small degree favoured by the unhappy political condition of the Mogul empire. This large empire came under the rule of Aurungzebe, a descendant of Akbar, in 1658, and his reign lasted till his death in 1707. Under this celebrated Mohammedan emperor, the empire of the Moguls came to the height of its glory, and attained its largest extent. After Aurungzebe had added to it the kingdoms of the Deccan, it included nearly the whole peninsula of Hindoostan, with the neighbouring regions of Cabool and Assam. The revenues extorted from this populous and wealthy territory amounted to £32,000,000 sterling. During the reign of Aurungzebe, it was attacked by the Persians under the bold Prince Nadir, and also by a growing nation called Mahrattas, whose kingdom comprehended large portions of the provinces of Malwa, Candeish, Aurungabad, and Bejapore, in the Deccan. By Nadir, and his successor, Ahmed Abdallah, the Mogul empire, after the death of Aurungzebe, was almost entirely subverted to the character of a tributary to the Persians. Under these circumstances, there was scarcely a native power that did not consider itself entitled to trample on the feeble authority of the throne of the Mogul; and between the Affghans, whose kingdom lay to the north-west, and the Mahrattas, the empire was distracted, and made the object of greedy contest. The Affghans were at length victorious over their enemy; and in 1753 they placed a descendant of the old dynasty on the throne, and in the possession of the empty, but still venerated title of Great Mogul, to be the tool or the captive of the first daring power which should seize the capital.

From this period the dignity of the empire was at an end, and a favourable opportunity was offered to the various dependent princes to throw off their allegiance, as well as to enterprising chiefs to take advantage of the unsettled state of things, and establish new kingdoms for themselves. In this state of general revolution, a bold Mohammedan adventurer arose from an obscure rank, named Hyder Ali, who, by summoning round him bold and predatory bands, and waging war with considerable address, established his power as a sovereign in the Mysore, a territory forming one of the most remarkable of those elevated table-lands that diversify the southern provinces. Hyder was succeeded in 1782 by his son Tippoo, a person equally bold, though less prudent and fortunate. Against both these powerful rulers the British for a number of years waged war with

various success. In 1792, Seringapatam, the capital of the Mysore, was besieged by the Marquis Cornwallis, with a strong British army, and after some show of resistance, Tippoo was fain to offer terms of surrender. He agreed to give up half of his dominions, and pay £3,500,000 in bullion. For the fulfilment of the treaty, he was under the necessity of giving up two of his sons as hostages. Having fulfilled his engagement, these young princes were returned in 1794; but after this he again commenced hostilities, and in 1799 the British forces, under General Baird, once more attacked, and now captured, Seringapatam. In the general slaughter which occurred in entering this strongly-fortified place, Tippoo was shot, and his body was afterwards found among a heap of the slain. Thus terminated a dynasty which, though short, and limited in respect of territorial dominion, was undoubtedly the most vigorous and best organised of any that had sprung out of the wreck of the Mogul empire. The principal war in which the East India Company was engaged after this successful contest was that with the Pindarees, roving tribes of Mahrattas, who, without any territory, carried on predatory warfare against all whom they could rob with impunity. The war with the Pindarees was one of great difficulty, and it cost the British a number of years before they finally quelled them. The Pindaree war terminated in 1817, and it was followed by a contest betwixt the British and the Birman empire, which was successfully closed in 1826, and by which the Company gained a considerable territory along the Bay of Bengal, east of the Brahmapoutra river. By the foregoing, and other less conspicuous contests with native princes, among which may be reckoned the war against the Nepaulese in 1814, and also by means of purchases, negotiations, and voluntary or involuntary renditions of territory, including the capture, cession by treaty, or purchase of the French and Dutch settlements, the British power was at length established as supreme over nearly the whole of India.

Hitherto the Company have governed their Indian territories by means of the presidencies of Calcutta, Madras, and Bombay, each of these places being the headquarters of a local military and civil government. In future there will be another presidency, that of Agra, a place of note in the interior. The whole are under the supreme control of a governor-general appointed by the British court; these governors-general seldom retain their situations above a few years. Mr Pitt, in 1784, passed an act establishing a Board of Control, composed of six privy-councillors, to superintend the territorial concerns of the Company, which check is still continued, and reappointed under the act of 1833. To retain possession of so large a territory as India, the Company require to keep up a numerous and well-appointed armed force, which is composed chiefly of natives or sepoys, with British officers, and partly of troops raised in Great Britain. The Company further employ a number of Queen's regiments, who have double pay allowed them. The army maintained in India consisted, in 1837, of 26,582 British, 157,753 native, and 111,500 contingent or subsidiary native—making an aggregate force of 295,840 men! The annual expense of the Anglo-Indian army is little short of £10,000,000. In 1830, according to Reports laid before Parliament, it was £9,374,000; and, since then, a very considerable increase has taken place, partly on account of the increasing extent of territory, and partly on account of the wars in Sinde, Affghanistan, and the Punjaub. Some idea of the nature and composition of this immense force may be formed from the following items of expenditure in the year above-named:—Engineer corps, £83,874; artillery, £606,463; cavalry, £1,070,834; infantry, £4,124,079; staff, £481,490; medical staff, £132,490; pioneers, £74,511; commissariat, £614,327; sundries, £2,178,887. The army, native and European, is distributed throughout the country, at appointed stations, forming a chain of military posts, and keeping up a continual communication with the seats of the various presidencies.

The relations which subsist betwixt the Company and the tributary and dependent states may thus be described:—The Company undertake the defence of the dependent prince's territories against all enemies, domestic or foreign. He is bound, on the other hand, to enter into no alliances with other sovereigns or states without the Company's consent; and he pays them a certain annual subsidy out of his revenues for their protection, while he generally keeps up an army at the same time for the maintenance of internal tranquillity. In some cases, instead of paying a subsidy, the prince cedes a portion of his territories, of which the Company draw the entire taxes. The Company keep a resident at the prince's court, who is entitled to demand an audience at any time; and by this agent the Company do in fact interfere pretty regularly in the internal concerns of the state, particularly in settling the succession to the throne. The princes are in reality mere viceroys, or rather tax-collectors for the Company; and when in any state gross mismanagement or breach of engagement repeatedly occurs, these pageants are dethroned and pensioned off, and the Company take the government of the country into their own hands. The Company's protection is often found to shelter internal misgovernment; for the prince, being secured by the British army against the resentment of his own subjects, is tempted to indulge the more freely in extortion and oppression.

REVENUE SYSTEM OF INDIA.

To sustain not only the above military force, but the civil management of India, a revenue of £18,000,000 requires to be levied. About two-thirds of this large sum is derived from a tax on land; and as the mode of collecting, imposing, and administering it, enters deeply into the system of Indian policy, and has a powerful influence on the social condition of the people, we shall here attempt its explanation.

Under the old Mogul empire, the sovereign was considered the universal proprietor of the soil; but the ryots, or cultivators, or actual owners, were held to have a perpetual right of occupancy, so long as they paid the fixed annual tribute or rent demanded by the sovereign. The rent was fixed at a third, and sometimes at a half, of the value of the produce, and the functionaries appointed to ascertain the amount leviable, and to collect it, were called *zemindars*. In 1793, Lord Cornwallis, governor-general, with a view to establish a better system for all parties, changed the zemindars from the character of hereditary tax-collectors to that of proprietors of the soil, though still accountable to government for the rent. This created a vast deal of misery at the time; thousands of poor ryots were ejected from their ancient possessions; but ultimately the country at large was benefited. It was arranged that the sum payable by the ryot for several years should be fixed as the permanent rent; one-tenth of this was allowed as the zemindar's share, and the other nine-tenths the proportion payable to the government or Company. The rent paid to the Company being fixed, great quantities of land which had been 'concealed'—that is, left out of the rough and partial returns formerly made, and which had lain in a wild state, or in pasture—were now put under crop. The practice is, to allow the ryot to occupy waste lands rent-free for three years, and to charge only a moderate rent for a few years more. In this way a considerable extension of cultivation has taken place; and some of the zemindars have acquired wealth. From their improvident habits, however, such wealth seldom lasts more than one generation; and no progress has been made towards the institution of a rural aristocracy. The Company have begun very recently to retrace their steps. When zemindaries fall into their hands, as they are always doing from time to time, by the inability of the holders to fulfil their engagements, the Company replace the ryots as nearly as they are able in their original situation, allowing them to hold their lands under payment of a rent which remains fixed, either permanently or

for a period of years. The Company in this case come in the room of the zemindar, and collect the rents in detail from the ryots by their agents.

This system of 'zemindary settlement' prevails generally in Bengal, Bahar, Orissa, and Benares. It has also been tried on a small scale in the Madras presidency, but with indifferent success; but in a modified form it has long existed in some parts of Southern India, where hereditary chiefs, called *polygars*, occupy a similar situation to that of the zemindars in Bengal.

There are other two modes of collecting the rent or land-tax (for it may receive either name); the *Ryotwar*, and the *Mouzawar*:—

The ryotwar was first extensively introduced by the late excellent Sir Thomas Munro, when governor of Madras in 1802. In this system the government collects the rent directly from the ryots, without the intervention of zemindars. An actual survey was made, with great labour and expense, of the lands of the villages, in which it was attempted to fix the extent and value not merely of every occupancy, but of every field. The records showed the whole sum which the village had paid in former years; and from this, with the opinions of practised assessors, checked and guided by the advice of the village *potail* and *curnum* (the headsman and accountant), an estimate was formed of the gross produce, 45 per cent. of which was assumed as the rent. The sum thus ascertained was fixed as the maximum which the tenant should be called on to pay. The rent is taken from the ryots in monthly payments, and very summary means are used to extort it. The system was extremely unpopular at its introduction, and occasioned great distress; but this was attributed to the excessive amount of the tax, rather than to defects in its imposition. The reader should be told that the perquisites of the potail, curnum, Brahmin, astrologer, schoolmaster, and a long train of other village functionaries, are supposed to absorb 10 per cent. of the ryot's crop, so that the 45 per cent. which government took in a good year was, and was meant to be, one-half of the clear produce after this deduction was made. In consequence of the outcry against the tax, considerable abatements were made; and the ryotwar system remains in operation in a considerable portion of Madras presidency at this time, with, we believe, comparatively few complaints.

The third system is the *Mouzawar*, or 'village settlement.' A village in India does not mean a collection of houses at a particular spot, but corresponds to what is called a township in America. 'It is a tract of country,' says Mr Hamilton, 'comprising some thousands of acres of arable and waste land; politically viewed, it resembles a corporation or township. Its proper establishment of officers and servants consists of the following descriptions:—The potail, or head inhabitant, who has the general superintendence of the affairs of the village, settles the disputes of the inhabitants, attends to the police, and performs the important duty of collecting the revenues within his village—a duty which his personal influence, and minute acquaintance with the situation and concerns of the people, render him best qualified to discharge: the curnum, who keeps the accounts of cultivation, and registers everything connected with it: the *talliar* (constable), or *totie* (watchman); the duty of the former appearing to consist in gaining information of crimes and offences, and in escorting and protecting persons travelling from one village to another; the province of the latter appearing to be more immediately confined to the village, consisting, among other duties, in guarding the crops, and assisting in measuring them: the boundary man, who preserves the limits of the village, or gives evidence concerning them in cases of dispute: the superintendent of the tanks and water-courses, who distributes the water therefrom for the purposes of agriculture: the Brahmin, who performs the village worship: the schoolmaster, who is seen teaching the children in the villages to read and write in the sand: the calendar Brahmin, or astrologer, who proclaims the lucky or unpropitious periods for sowing and thrashing: the smith and carpenter, who manufacture the implements of agriculture, and build the dwelling of the ryot: the potman, or potter: the fisherman; the barber; the cowkeeper, who looks after the cattle; the doctor; the dancing-girl, who attends at rejoicings; the musician, and the poet. These officers and servants generally constitute the establishment of a village; but in some parts of the country it is of less extent, some of the duties and functions above described being united in the same person; in others, it exceeds the number of individuals which have been described. Under this simple form of municipal government, the inhabitants of the country have lived from time immemorial. The boundaries of the villages have been but seldom altered; and though the villages themselves have been sometimes injured, and even desolated, by war, famine, or disease, the same name, the same limits, and even the same families, have continued for ages. The inhabitants give themselves no trouble about the breaking up and division of kingdoms; while the village remains entire, they care not to what power it is transferred, or to what sovereign it devolves; its internal economy remains unchanged; the potail is still the head inhabitant, and still acts as the petty judge and magistrate, and collector or renter of the village.'

It will be understood that under the zemindary settlement the government transacts with one individual for an extensive district, probably as large as a county; under the mouzawar or village settlement, it transacts with the chief person of the village for the whole community; and under the ryotwar settlement, it transacts with each individual cultivator. It may be proper to add, that in India a ryot seldom holds more land than he and his family are able to cultivate, and that there are few farm-servants in our sense of the word.

Of the three modes of settlement, it may be stated that the zemindary plan has yielded the largest revenue; the method of 'village settlement' does not cause much more trouble to the government, and is better liked by the cultivators; the ryotwar is the most expensive and troublesome, and has been the least productive of revenue; but it would be the most equitable and most advantageous to the people at large, if the ends of justice were not defeated by the frauds of the native functionaries intrusted with its details, and whose corruption is almost universal.

The revenue derivable from land by these various processes of exaction amounts, as has been said, to two-thirds of the whole revenue of the Company, or the sum of £12,000,000. The next greatest head of revenue is the receipt from native princes, or from ceded and conquered countries, and which averages in amount from £6,000,000 to £7,000,000.

The Company have hitherto gained £1,000,000 sterling per annum by the monopoly of opium. They have offered a price annually, which has been fixed at the lowest rate that will remunerate the producer; and ryots, whose lands have been suited to the cultivation, entered into engagements to deliver certain quantities. About two-thirds of the opium used to be smuggled into China, until the Chinese stopped the importation; and one-third was sent to the eastern isles, Java, Sumatra, &c. Salt has also been an article of valuable taxation. It has been manufactured on the coast of the Bay of Bengal exclusively for the Company. Before it reaches the consumer, its price is enhanced five, eight, or ten fold. The Company have realised a gross revenue of £2,000,000 per annum from this monopoly.

The customs drawn by the Company consist partly of taxes collected at the seaports on foreign goods brought in, and partly of *transit* duties, levied on goods passing through the country. There are provincial duties, paid in passing from one presidency to another; town duties, on certain articles at the gates of towns; and market duties, levied at the market stations where fairs are held. To collect these taxes, and guard against contraband trade, there are customhouses, called *chokies*, at every considerable village. In the single district

of Madura, with a million of souls, in the Madras presidency, there are twenty-one customhouses, each of which has four or five subordinate establishments; and at these stations, even when no duties are exigible, fees are charged by the native officers for the trouble of examination, and a good deal of delay is caused in the transmission of merchandise. These taxes are sources of annoyance and occasional extortion to the trading classes. They produce a gross sum of £1,800,000, which is reduced to £1,600,000 by the charges of collection, &c. We believe that a considerable portion of the revenue derived from these duties on traffic is laid out by the Company in the construction of roads and bridges, where improvements of this kind are most wanted.

In 1843-4, the annual revenue was £17,015,973, but this large sum did not cover the expenditure, including interest on the debt due by the Company, which now amounts to about £40,000,000—the actual deficiency being £772,322. As India, by the taxes which it contributes to the Company, clears the cost of its own protection and all its other expenses, it may be considered as the only foreign possession of Britain whose connection is not a cause of loss to the mother country. By means of its vast import trade, India forms one of the best customers for British manufactures, and is therefore a source of wealth to the United Kingdom. [For particulars of export and import, see RESOURCES OF BRITISH EMPIRE, No. 62.]

As may be generally known, an act of parliament was passed in the year 1813, permitting the free trading of British subjects with India, reserving the commerce of China to the Company; the territorial and commercial branches were separated, as well as all accounts connected with them; and the sovereign was empowered to create a bishop of India, and three archdeacons, to be paid by the Company. This act, which was in force till the 22d day of April 1834, did not afford perfect freedom of trade to India, yet it led towards that desirable result, and greatly increased the commerce with the East. By the act 3d and 4th Will. IV. cap. 85, passed in August 1833, entitled 'An act for effecting an arrangement with the East India Company, and for the better government of his Majesty's Indian territories, till the 30th day of April 1854,' the Company were deprived of the exclusive right of trading with China, and ordained to close the whole of their commercial business, and make sale of their merchandise, stores, and effects, so far as regarded commercial assets. It was further ordained that the whole debts of the Company should be chargeable upon the revenues of their Indian territories, but leaving a yearly dividend of 10 per cent. to be retained by the Company; this dividend to be redeemable by parliament. The Company to pay into the Bank of England £2,000,000 annually, till the sum of £12,000,000 is accumulated, as a security fund to the government. The other principal provisions were—A board of commissioners, to be appointed by the king, to superintend affairs of India; Bengal presidency to be divided into two presidencies—Fort-William (Calcutta) and Agra; the whole government, civil and military, of India, to be vested in a governor-general and councillors.

The 81st clause is in these terms:—'And be it enacted, That it shall be lawful for any natural-born subject of his majesty to proceed by sea to any port or place having a customhouse establishment within the said territories, and to reside thereat, or to proceed to and reside in, or pass through, any part of such of the said territories as were under the government of the said Company on the 1st day of January 1800, and in any part of the countries ceded by the nabob of the Carnatic, of the province of Cattack, and of the settlements of Singapore and Malacca, without any license whatever; provided that all subjects of his majesty, not natives of the said territories, shall, on their arrival in any port of the said territories, from any port or place not within the said territories, make known in writing their names, places of destination, and objects of pursuit in India, to the chief officer of the customs, or other officer authorised for that purpose, at such port or place as aforesaid.' Clause 86 permits his majesty's natural-born subjects to purchase lands in India; 87 enacts that no native of India, or natural-born subject of his majesty, shall, by reason only of his religion, place of birth, descent, colour, be disabled from holding any place, office, or employment under the Company; 112 enacts that the island of St Helena be placed under his majesty's government.

By this act it will be perceived that several very important provisions are made for the benefit both of Hindoostan and Great Britain. India is henceforth open to the settlement of British emigrants; trade may be carried on freely with either India or China; and Indo-Britons, Hindoos, or other natives, are now placed on a level as to political, military, or civil distinctions, with Englishmen. It is stipulated that the governor-general in council is empowered to legislate for India, and for all persons, whether British or native, foreigners or others: if the laws thus made by the governor-general are disallowed by the authorities in England, they shall be annulled by the governor-general. In virtue of these arrangements, it is evident that India, with all its social improvements, retains very much of the character of a despotically-governed country; no part of the population having any right to interfere in the legislation or executive. To enlightened foreigners this may prove an inconvenience; but in the extraordinary condition of the whole Indian territory, a more liberal policy would most likely be unsuitable, if not injurious. As it is, England may expect to derive very great advantages from the policy pursued. To use the words of Dr Wallich, superintendent of the Company's botanic gardens at Calcutta—'The Company's territories in India are productive of every article which can conduce to the happiness of men; and it only requires skill, and ingenuity, and encouragement, both to the natives and Europeans in India, to select everything that can possibly be desired.' As the Indian population possess a taste for British manufactures, a reciprocal benefit will be the result of every increase of intercourse.

NATIVE POPULATION—HINDOOS.

The bulk of the population of India is composed of Hindoos, the primitive inhabitants of the country, and forming one of the most ancient nations in the world. This race was distinguished for their humanity, gentleness, industry, and were polished by letters and arts, at a time when most of their Asiatic neighbours were yet only in the first stages of civilisation. This remarkable people have preserved their national character for thousands of years, even under the dominion of foreigners, and have retained to the present day their language, their written characters, their local government, religion, manners, customs, and habits of life. The Hindoos are in general of a brownish-yellow complexion, but the higher and richer classes are almost as white as Europeans. They are somewhat above the middle height, well proportioned, and very flexible and dexterous. Temperance, frugality, hospitality, and obliging manners, are the favourable traits in their character; but they are now reproached with indolence and avarice. With proper discipline, they form excellent soldiers and faithful servants of the Company. They possess great natural talents, but are at present deprived of opportunities for their development. They practise agriculture, breeding of cattle, fishing, hunting, and mining, and are largely engaged in manufactures, commerce, and navigation. They manufacture cloths of great variety and value, particularly cotton and silk, among which are the finest muslins and shawls, mats, cordovan leather, &c. and are inimitable in dyeing. In the arts of music and singing they are backward, but in dancing, statuary, and architecture, they are more advanced. They are acquainted with arithmetic, astronomy, and chronology, and are fond of poetry.

The most extraordinary peculiarity in the Hindoos is their division into *castes*, or perfectly distinct orders of society, which have existed from the remotest times.

There are four castes, and it is strictly enjoined by the Hindoo religion that no transition from one to another shall take place: no connection between them by marriage or any other way is allowed, and no individual of one class can assume the habits or engage in the occupations of another. The distinction is complete in every sense, hereditary and personal; all the privileges or disabilities are inherited; no one is permitted to become what he is destined to be by his natural abilities, but is obliged to become only what his birth permits, or to remain what it condemns him to be. The slightest transgression of these laws is punished with loss of caste, and sometimes, in particular cases, with death. Even the difference of food is precisely marked out. The three higher castes are prohibited entirely the use of flesh; the fourth is allowed all kinds except beef; all others are outcasts, and may eat what they please. Thus the lower the rank of the Hindoo, the less he is restricted in the matter of meat and drink; but, on the other hand, the burdensome restrictions increase with the inferiority of rank.

The first, or most noble caste of the Hindoos, are denominated Brahmins; they are priests, scholars, teachers, lawyers, and state officers, and are required to be virtuous, learned, peaceable, just, and self-denying. The second order is the Kyetra, who are kings and warriors; and they are required to have a thirst for glory, to die rather than retreat, and to be generous to captives. They preserve the ancient name of Rajahpoots, by way of distinction, in their old hereditary dominions. The third order, which is called Bhysya, or Voiss, are husbandmen and merchants. The fourth caste is that of the Soodras, who are labourers, and they are enjoined to serve with patience and fidelity. A lower caste, if it can be called such, are the Parias—those unhappy beings who have lost their station in the noble orders, and who are obliged to do whatever no one else can do without pollution. They are not only reckoned unclean themselves, but they render unclean everything they touch. They are deprived of all civil privileges, and stigmatised by particular laws, regulating their mode of life, their houses, and their furniture; they are not allowed to enter the temples of the other orders, but must worship by themselves. Their houses are miserable hovels, distant from cities and villages.

The Brahmins, who are not legitimately entitled to possess property, and who must live upon the bounty of others for their support, cherish in the people the most debasing superstitions, and exact from them the most profound veneration. Instead of being holy, harmless, and undefiled, they are vicious, tyrannical, avaricious, and to the last degree impure. This infamous aristocracy is the curse of India, and presents a barrier to the attempts which have been made to meliorate the condition of the inferior orders. We believe the Kyetra and Bhysya castes are nearly extinct, and that the Hindoo nation is now composed principally of Brahmins and Soodras, with their subdivisions. These subdivisions are innumerable:—Every trade, every peculiar department of service, has its class, wherefore the retinue of servants to be kept is very large; for the man who carries in your water cannot wait at table, nor the man who cooks a dinner serve it up, nor the servant who waits at table sweep the room; and the same kind of classification goes on through all the pursuits of life. In a number of instances, Brahmins have become soldiers in the service of the East India Company, but without engaging in menial employments; and they still claim precedence even of kings in point of etiquette. This rigorous classification of the Hindoos undoubtedly presents an obstacle to the advancement of Christianity, which, though hardly thought of by the British at home, is next to insurmountable, and will retard proselytism for an almost indefinite period.

From recent investigations, it appears that the foregoing rigorous classification of the Hindoos is much less an obstacle to improvement in manners than was formerly supposed. It would seem that the classification is more theoretic than practical. The altered state of society has obliged members of the aristocratic castes to engage in divers employments or trades not permitted by their religion; but to accomplish this object, various subterfuges and self-deceptions are practised. Besides, there have arisen a prodigious variety of subdivisions by the intermixture of castes; and the employments allowed to these mixed or impure castes may be said to be every description of handicraft and occupation for which the wants of human society have created a demand. In point of fact, we are told by the best authority, that men of all castes may be seen working together in one handicraft employment. A kind of purity of caste is perhaps, nevertheless, kept up by the members of different castes not eating with each other, or not eating forbidden things. It is related that purity of caste is sustained by means of clubs or lodges scattered throughout Hindoostan, and existing in considerable force in every large town; yet it seems that excommunication from these fraternities is, upon the whole, unable to prevent the breaking down of ancient habits, or to subdue the disposition to imitate the English in the arts of civilised life. The Hindoo races are indeed described as now exceedingly anxious for improvement; and it is rational to expect that through the means of schools for education, and a conciliatory behaviour on the part of their British neighbours, they will attain no small degree of cultivation.

HINDOO RELIGION AND LANGUAGE.

The religious belief of the Hindoos is called Brahminism, and is founded on a most extensive collection of sacred records, of which the Brahmins are allowed to be the sole expounders. 'These sacred writings,' says Mr Statham, in his 'Indian Recollections,' 'are of two kinds—the Vedas and Shastres. The former may be termed their Scriptures, the latter expositions of them. Beass Muni—that is, Beass the Inspired, a prophet who lived in the reign of Judistheer, on the banks of the Jumna, near the present city of Delhi, collected all the detached pieces which form the Vedas, from all parts of India, and gave them their present form and arrangement. They are divided into four books, all written in the Sanscrit. The first book is called Rug Veda, which signifies the Science of Divination, concerning which it principally treats. The second is distinguished by the title of Sheham, which signifies Piety or Devotion, and this book treats of religious and moral duties. The third is the Judger Veda, which, as the word implies, includes the whole science of Religious Rites and Ceremonies. The fourth is denominated Obater Bah: in the Sanscrit, *obater* signifies the being or essence, and *bah*, good; this, literally interpreted, is the knowledge of the Good Being, and accordingly this book comprehends the whole science of theology and metaphysical philosophy.

The Vedas, as also the Shastres or commentaries, pretend to great antiquity; so much so, that many Europeans have been strangely staggered in their belief of the Mosaic chronology by reading them. But it only requires a little consideration and research to discover a vein of imposition running through the whole of their details. They reckon the duration of the world by four ages, extending altogether to about eight millions of years; but the fallacy of this reckoning has been fully exposed by astronomical observation. The idea which the Shastres give of God is, that there is one Supreme Being, whom they style Bhogabon or Esher, sometimes Khodah; proceeding from him are three powers or deities—namely, Bruhmha, the Creator of all; Vishnu, the Preserver of all; and Seeb or Sheva, the Destroyer of all. Now, whilst the latter is worshipped by all, the former has scarcely any attention paid to his temples; and even Vishnu, the Preserver, has few votaries compared with the destroyer Seeb. Subordinate to these are 330,000,000 inferior gods and goddesses, each representing some peculiar virtue or vice. The Hindoos suppose that each of the three presiding powers oftentimes seeks to encroach upon the

prerogative of his compeer, and thus are often quarrelling and seeking to subvert each other's arrangements.'

One of their most superstitious practices consists in worshipping or deifying the waters of the Ganges. This large and beautiful river extends from west to east across an extensive district in Hindoostan Proper, and with its tributaries may be reached by a very large proportion of inhabitants in the most populous and productive part of India. The sacred ceremony of adoring the Ganges consists in the population crowding morning and evening to bathe in it, and quantities of the water are carried to all parts of India, and are sworn by in courts of justice.

The cow is an animal held sacred among the Hindoos, and cow-dung is used in the temples and other places as a species of holy ointment. The lotus, a plant with tall luxuriant leaves, is likewise held in deep veneration. Some of the temples or pagodas of the Hindoos are of high antiquity and gigantic conception, majestic appearance, and tasteful architecture. The entrance is always made in a huge pyramid, in a number of storeys, which gradually grow narrower as they approach the top. Inside may be seen the cow lying down, a serpent, or some other object of adoration. Here sacrifices take place. One of the most extensive pagodas of India is that of Juggernaut, whose towers are seen at twenty miles' distance. Here, as at other places, there are processions of idol cars, large heavy ornamented structures, which are dragged along by the multitude amid the shouts of assembled thousands. As the wheels pass swiftly on, self-devoted victims rush forward, throw themselves before them, and are crushed to death, exulting in the hope of thus securing a passage to the celestial abodes. The practice of widows sacrificing themselves on the funeral pile of their husbands, is another horrid rite; but it has been suppressed in recent times by the British government.

Besides Brahminism, there are a variety of religious beliefs and sects in India, but all less or more founded on the most gross superstitions. Each possesses its own temples, images, and orders of priesthood. The Boodhists, previous to their violent expulsion by the Hindoos, were second in point of numbers; but their religion is now little known in India, and is confined chiefly to Thibet, Birmah, Siam, and Ceylon.

There are, it is believed, four original languages in India, and of these there are some hundreds of dialects, differing less or more from each other and from the originals, and maintaining also a partial distinction from the introduction of Arabic, Persiac, and other foreign words. While, however, each tribe has its own peculiar dialect, all use one language, the Sanscrit, in their sacred writings. The Sanscrit is a dead language, though probably once spoken; it is wonderfully perfect in its construction, and extremely copious. Its alphabet is called *Devanagari*, divine alphabet, because it is said to have had its origin from the gods, whose language it is; it consists of fifty letters, and has three genders. The next language in estimation is the Pracrit, which comprehends the various dialects used in common writing and social intercourse. The dialects of the Pracrit are spoken in Bengal, and include that which is called Hindoostanee, the principal spoken tongue in India.

MOHAMMEDANS AND OTHER CLASSES.

According to Mr Hamilton, 'the modern Mohammedans may with safety be estimated at one-seventh of the total population; and notwithstanding the subversion of their political predominance by a Christian power, their religion continues to expand. They are no longer, however, the sanguinary zealots who, eight hundred years ago, in the name of God and the prophet, spread desolation and slaughter among the unconverted pagans. Open violence produced little effect on so patient a people; and although the Mohammedans subsequently lived for centuries intermixed with Hindoos, no radical change was produced in the manners or tenets of the latter; on the contrary, for almost a century past, the Mohammedans have evinced much deference to the prejudices of their Hindoo neighbours, and a strong predilection towards many of their ceremonies.' The warlike portion of the Mohammedans having recently been dislodged by the British from the Mahratta courts, where they had found shelter, they have been obliged to seek employment in inferior stations. The Mohammedans of India are more intelligent, and possess greater strength and courage, than the Hindoos; but they are also more proud, jealous, revengeful, and rapacious, and their fidelity is much less relied on by the British government. In some districts the Mohammedan population is nearly as numerous as that of the Hindoos, and both seem to live in a state of mutual amity.

Besides the Hindoos and Mohammedans, there are various scattered tribes in India, of a very different character from either, and often inhabiting mountainous tracts of country, and called Garrows, Mongulls, Tartars, &c. Among the different races is found that of the Parsees or Persians, the ancient worshippers of fire, long since driven from their native country by the persecuting sword of the Arabs. Many of this people are opulent, and they take the lead in the commercial transactions of Bombay, Surat, and other north-western parts. Their general conduct is quiet and respectable.

Notwithstanding what has been related of the strictness of the Hindoos regarding modes of living, they seem liable to fall in with European usages. In Calcutta and other large towns, many of the wealthy natives imitate the British in their dress, household furniture, equipages, and style of living, and show a strong desire to mix in their social parties, to which, however, they rarely find access. The English take no pains to conciliate the friendship of the native tribes, however well behaved and intelligent they may be. 'Of this foolish, surly, national pride,' says Bishop Heber, 'I see but too many instances daily, and I am convinced it does us much harm in this country. We are not guilty of injustice, or wilful oppression, but we shut out the natives from our society, and a bullying, insolent manner is continually assumed in speaking to them.' The exclusiveness of this species of hauteur is perhaps fully more remarkable with respect to that class of persons who have drawn their origin from the intercourse betwixt the English and natives. These Indo-British, as they are called, form a part of the population of Calcutta, and are a very interesting and increasing people. 'Many of them,' says Statham, 'are very opulent, and others can vie with the more cultivated of their European neighbours in literary attainments; notwithstanding this, there is a marked contempt shown them by Europeans generally. If a European lady should wed with an Indo-Briton, the doors of all the higher circles would be closed against her, however rich the man of her choice might be.' This state of things will happily be modified by the provisions of the act already noticed.

RURAL CHARACTERISTICS AND PRODUCTS.

In the large and fertile territory of Bengal, as well as in all other parts of India where the cultivation of the soil is pursued, the art of the husbandman is, as may be expected, still in the rudest state; and in every quarter there exists great room for improvement, which nothing could so well facilitate as the settlement of intelligent European families. In the inundated districts of Bengal, rice is the main crop which is raised, at least during the wet season: it grows to its greatest height while the lands are overflowed, and is frequently reaped by men in canoes, the ear only being cut off, and the stalk left. When the peasants go to market during the height of the flood, they take their families with them, lest the house should be washed off during their absence with the boats. Rice is the summer crop, requiring much heat and moisture; but during the cool dry season, from November to April, they sow and reap another harvest, consisting of wheat, barley, or different kinds of pulse: this is called the *dry crop*, because it is reared without flooding the lands;

the rice being considered as the *wet crop*, for a contrary reason. There are therefore two seed-times and two harvests. Besides these regular crops, many small grains are sown, which are limited to no particular season of the year, and which reward the industry of the cultivator with a rich vegetation at all times.

Besides the different kinds of grain, the farmers of Bengal raise a number of other products, of great value. Of these, one of the principal is indigo: this is a small plant, shrubby in its growth, but in its leaves and flowers very much like the common tares of this country; it is sown during the rains, and raised in rows or drills. The leaves only are useful, on which account it is cut repeatedly, without being allowed to flower, which would make it drier and less juicy. The leaves are steeped and beaten in a vat among water; after which the liquid is strained through cloths, and set to evaporate in shallow troughs placed in the shade. This is soon effected in that warm dry climate; and the indigo is then found deposited in a crust at the bottom. The process requires much preparation and expense; and it has only succeeded well since the country has enjoyed peace, and there has been a prospect of employing large capitals with security. It now produces, however, a large return to the cultivators; and gives a new source of wealth to the country. It is cultivated along the whole course of the Ganges up to Delhi, and is an annual in the lower, but a triennial in the upper provinces. It succeeds best on overflowed grounds, and in dry seasons is apt to fail. The number of factories of indigo in the Bengal presidency is estimated at 300 or 400. A few of them belong to natives; but they are chiefly in the hands of Englishmen, who take leases of 10,000 or 20,000 acres of land, in the name of native servants (not being allowed to hold it in their own), from a zemindar for the purpose. They encourage the ryots (native cultivators) to raise crops of the plant, by making advances to them in money. They purchase the produce at a price agreed on, and erect works for extracting the dye from the plant; the whole of the operations being generally conducted by native labourers, under native superintendents. It is observed that the establishment of such factories raises the value of land, extends cultivation, and spreads a certain degree of improvement in the villages. The importation of Bengal indigo into Britain began about forty years ago, and has since increased to an amazing extent. It is calculated that about 11,000,000 lbs. are annually exported from the country, of which 7,000,000 lbs. come to Britain, and the rest goes to America, France, Germany, Sweden, &c. In Bengal alone £1,680,000 are expended for rent and labour in its production, and it realises in Europe a sum of £3,600,000. In the countries named, Bengal indigo is silently obtaining a preference over every other.

Silk is raised in great quantities in Bengal and Orissa, between the latitudes of 22° and 26°, and it has hitherto been very nearly a monopoly in the hands of the Company. It is chiefly produced by the native Indian worm, which affords four crops, or sometimes six in the year: the Italian worm, which was introduced half a century ago, yields only one crop a year, but of a finer quality. The Indian silk, compared with the best European varieties, is 'foul, uneven, and wants staple;' but its cheapness has brought it into extensive consumption. The Company have eleven factories, or 'filatures,' which form the centres of 'circles,' within which the cultivation of silk is carried on, each having a certain number of subordinate stations. The silk, in the raw state, is purchased from the ryots at the factories or subfactories, wound off the cocoons, and prepared for transmission to Europe. About 2,000,000 lbs. are annually brought to England, of which a very small quantity (one per cent.) is equal to the finest silk; the mass of it is decidedly inferior. There is strong ground to conclude, however, that the production of silk in India will yet be greatly increased.

Cotton has long been cultivated by the natives in all the three presidencies. It is universally of the kind called 'short staple,' and being coarse in quality, and badly cleaned, it fetches only two-thirds of the price of American short staple in the British market. The best quality comes from Bombay (the Guzerat); the next from Madras; and the worst from Bengal. The cultivation being entirely in the hands of the natives, is rudely conducted; and in particular, pains are not taken to renew the plant constantly from the seed, as the Americans do with the most advantageous results. Experiments have been made under the sanction of the Company, and by private individuals, to introduce and cultivate finer species than those in use, but they have generally been failures. There is no doubt, however, that by the introduction of European capital and skill, the quality of Indian cotton may be much improved, and what is raised sent to the market in a much cleaner and better condition. The exports of cotton from India to all countries amounted lately to 72,000,000 lbs., of which only a third part came to Great Britain.

The cultivation of the sugar-cane is pursued with great success in Bengal and other parts of India, but chiefly by the natives, for domestic use. The process of bruising the canes is on a rude plan, and the sugar which is produced is from this or some other cause very inferior to the sugar of the West Indies. In no article of produce is there greater room for improvement than in this. The cultivation of the cane requires great care and skill, and the mechanism for extracting and preparing the sugar can only be erected at a great outlay of capital. It is anticipated that when Europeans are permitted to hold lands freely, and to embark capital on sugar plantations, sugar of good quality may be manufactured much cheaper than in the West Indies, where the price of labour is much higher.

The bamboo, a species of cane or reed, is much cultivated in Bengal. It grows to the amazing height of forty feet; and though it arrives at perfection in two years, it has all the firmness of the hardest timber. It has joints like a reed, or like grass, and is, like them, quite hollow; yet it is so strong that the porters of the country use it for suspending the heaviest burthens between their shoulders. It is used for beams and uprights in building houses; and being protected from damp by a kind of natural varnish, it will last in such situations for a hundred years. It serves also for making bridges, for the masts of small boats, and for innumerable other purposes; yet of this useful material, one acre of land will yield ten times as much as the same space will produce of other wood. None of the productions of India puts so many conveniences, in regard to furniture, houses, boats, &c. within reach of the poorer classes, as the bamboo. It would require a volume to mention even the names of the plants useful to man which flourish in the luxuriant soil of Bengal. Cotton, tobacco, the opium poppy, rape (which is cultivated for the sake of its oil), cucumbers, vegetable marrow (as one of the gourd tribe is called), and innumerable other plants, always afford a plentiful harvest. Of fruit-trees there are the mango, which is something like our peach, the date-tree, the tamarind, the guava, the pomegranate, and others. Another production, which is peculiar to warm climates, and which grows in high perfection along the sea-coasts, is the cocoa-palm. This tree would of itself be almost sufficient for the subsistence of mankind in the countries where it grows, so various and useful are its products; indeed there are some populous islands—the Maldives and Laccadives—where little else is cultivated.

In the interior of India, the tea-plant is said to flourish, and is likely to become of great importance to the trade of the country. Districts lying between the 26th and 28th degrees of north latitude, and the 94th and 96th degrees of east longitude, are described as possessing this shrub in abundance, and of a quality equal to that of China. In Assam, which lies between Bengal and Thibet, the attempt has lately been made to cultivate and gather the product of the tea-plant for purposes of commerce. In 1838, ninety chests of it were imported into London, and found to be of a good quality.

Persons skilled in the gathering and preparation of the leaves have been introduced from China; and there seems little reason to doubt that Assam is capable of producing tea to any extent, if sufficient capital and enterprise were exerted in the undertaking.

CHIEF CITIES.

Calcutta, the British capital of India, is situated about 100 miles from the sea, on the east bank of the Hoogly, a branch of the Ganges, in latitude 22° 23′ north, longitude 88° 28′ east. The length of the town is about 6 miles along the bank of the river. When seen from the south, on which side it is built round two sides of a great open plain, with the Ganges on the west, it presents the view of a very noble city, with tall and stately houses ornamented with Grecian pillars and spacious verandas. The esplanade between the town and Fort-William leaves a grand opening, along the border of which is placed the new and splendid government-house, erected by the Marquis Wellesley. Fort-William, which was commenced by Lord Clive, is the largest and strongest fortress in India, but is considered too extensive to be easily defended: its garrison usually consists of two European regiments, with artillery, besides a supply of native troops. The public buildings of Calcutta, besides the government house, are a town-hall, a court of justice, two churches of the established religion, and one for the Scotch Presbyterian worship, which is a very handsome edifice. There are also several chapels for other religious bodies, mosques, and pagodas—the latter generally decayed and ruinous, the religion of the people being chiefly conspicuous in their worship of the Ganges. Behind the elegant front lines of houses is ranged the native town, deep, black, and dingy, with various crooked streets, huts of earth baked in the sun, or of twisted bamboos, interspersed here and there with ruinous brick bazaars, pools of dirty water, cocoa-trees, and little gardens, with some fine large dirty houses, the residences of wealthy natives. 'Fill up this outline,' says Bishop Heber, in his valuable Correspondence, 'with a crowd of people in the street, beyond anything to be seen even in London, some dressed in tawdry silks and brocades, more in white cotton garments, and most of all black and naked, except a scanty covering round the waist, besides figures of religious mendicants with no clothing but their long hair and beards in elf-locks, their faces painted white or yellow, their beads in one ghastly lean hand, and the other stretched out like a bird's claw to receive donations; marriage processions, with the bride in a covered chair, and the bridegroom on horseback, so swathed round with garlands as hardly to be seen; tradesmen sitting on the ground in the midst of their different commodities, and old men, lookers on, perched naked as monkeys on the flat roofs of the houses; carts drawn by oxen, and driven by wild-looking men with thick sticks, so unmercifully used as to undeceive perfectly all our notions of Brahminical humanity; attendants with silver maces pressing through the crowd before the carriage of some great man or other; no women seen except of the lowest class, and even these with heavy silver ornaments on their dusky arms and ankles; while coaches, covered up close with red cloth, are seen conveying the inmates of the neighbouring seraglios to take what is called "the air;" a constant creaking of cart wheels, which are never greased in India; a constant clamour of voices, and an almost constant thumping and jingling of drums, cymbals, &c. in honour of their deities; and add to all this a villanous smell of garlic, rancid cocoa-nut oil, sour butter, and stagnant ditches, and you will understand the sounds, sights, and smells of what is called the "Black Town" of Calcutta. The singularity of this spectacle is best and least offensively enjoyed on a noble quay which Lord Hastings built along the shore of the river, where the vessels of all forms and sizes, Arab, Indian, Malay, American, English—the crowds of Brahmins and other Hindoos washing and saying their prayers—the lighted tapers, which, towards sunset, they throw in, and the broad bright stream which sweeps by them, guiltless of their impiety and unconscious of their homage—afford a scene such as no European and few Asiatic cities can at all parallel in interest and singularity.'

In recent times considerable improvements have been made in and about Calcutta, jungles being cleared away, streets drained, and stagnant water removed. Though the situation of Calcutta has not been well chosen, it is excellently adapted for commerce. At high water the river is here a full mile in breadth. The advantages possessed for inland navigation are considerable; foreign imports may be transported with great facility, on the Ganges and its tributaries, to the north-western quarters of Hindoostan, while the valuable productions of the interior are received by the same channels. There is at all times a vast quantity of merchandise deposited at Calcutta, and the trade carried on is now very extensive. Besides a government bank, there were lately two private banks, which circulate to a considerable amount. There are several daily, twice-a-week, and weekly newspapers; and recently a quarterly review. The religious, and charitable, and educational institutions are numerous, and of great service. Society in Calcutta is gay and splendid; and the British inhabitants among their own class are described as hospitable, though jealous of etiquette, and of an overbearing disposition. There are no hotels, or inns, or lodging-houses of any description—a want which appears perfectly amazing—and all strangers, male or female, must be provided with introductions to the houses of residents. The expenses of living are very considerable; and as there are now no more opportunities of acquiring wealth by the spoliation of native principalities, fortunes are much seldomer realised than formerly. There being also now fewer deaths, there are fewer chances of promotion.

The population of Calcutta is composed of about 14,000 Christians, 48,000 Mohammedans, and 120,000 Hindoos; but this is the amount only within the city proper. If the environs or suburbs be included, the population will amount to perhaps 500,000; and so densely peopled is the surrounding district, that within the circuit of twenty miles there is a population of nearly two and a-half millions. In 1841 the exports of Calcutta amounted to £5,867,767, and the imports to £8,369,329.

Madras, the seat of government of Southern India, is situated in the Carnatic, on the shore of the Bay of Bengal, in latitude 13° 5′ north, longitude 80° 21′ east. The shore is here low, and dangerous to approach by vessels. On the beach stands Fort St George, a place of considerable strength, and which may be easily defended by a small garrison. A noble range of public edifices, including a customhouse and courthouse, also adorn what is called the north beach. Madras differs in appearance from Calcutta. It has properly no European town, the settlers residing in their houses in the midst of gardens, and transacting business in the district appropriated to the residence of the natives. The principal church in Madras, St George's, is a beautiful edifice. There are many excellent charities here; and the school for male and female orphans, into which the philanthropic Dr Bell introduced the Lancastrian system of education, is superior to anything of the kind in Calcutta. The society of Madras is more limited than that of Calcutta, but the style of living is similar. The roads in the vicinity are excellent, and afford most agreeable drives to the European residents. According to Heber, 'the native Christians are numerous and increasing, but are unfortunately a good deal divided about castes.' The Armenians are here numerous, and some of them wealthy. A Scotch Presbyterian church has been some time erected. The population of Madras and its suburbs has been stated at upwards of 400,000. In 1841 the exports of Madras amounted to £1,780,000, and the imports to £3,000,000.

Bombay, the seat of government for the western parts of India, is a small rocky island, lying on the west coast of Hindoostan, in latitude 18° 56′ north longitude

72° 57′ east. Bombay was originally some hilly rocky islets, but these, by the influence of the high tides, have been joined to each other; and now the island is composed principally of two unequal ranges of whinstone rocks, extending from 5 to 8 miles in length, and at the distance of about 3 miles from each other. All the ground that can be cultivated is now laid out in agriculture, and the remainder is either barren or covered with the residences of Europeans and natives. These residences are on wet, low, and unhealthy grounds, ever below high-water mark; and from this and other circumstances, Bombay is described as being the most insalubrious of the presidencies. The fort of Bombay is situated at the south-eastern extremity of the island, on a narrow neck of land. The chief advantage of Bombay is its deep tide-water, which permits the most extensive system of maritime trade: excellent docks are erected for the accommodation of the shipping. Bombay is the seat of very extensive trade with the Persian Gulf on the north, as well as with the south of India. Cotton is the principal article of export. The population is stated at about 180,000, composed of Christians, Jews, Mohammedans, Hindoos, and Parsees. In 1841 the exports of Bombay amounted to £5,160,769, and the imports to £5,577,315.

MISCELLANEOUS PARTICULARS.

The preceding brief sketches can convey but a feeble idea of the immense extent and varied character of the Indian empire, as well as of its vast capabilities and importance as a possession of Britain. In India, the European traveller is everywhere charmed with the wild grandeur of the scenery and the luxuriance of the soil; and he is equally surprised at the density of the population, and the traces of superstitious observance, which meet his eye. The people for the most part live in an exceedingly simple manner. Much of their food requires no cooking; plantains, cocoa-nuts, pumpkins, and other fruits, being more palatable raw than dressed. The chief cooked article is rice. Houses are made of bamboo or cajann stakes, without splitting, planing, or dressing of any kind; they are then woven together with small twigs equally unprepared; the whole is plastered over with mud from the nearest clay-hole, and then thatched with cocoa-nut leaves fresh from the tree. Oars for their boats are only bamboos, with a round board tied to the end; the masts are two or three of the same bamboos lashed together with strings. Drinking cups are made of a large nutshell, with one end rubbed off on a stone; a most palatable and wholesome drink is found in the juice of the cocoa-nut palm, which is received into an earthen jar as it drops from the point of a broken branch; and its only preparation is straining through a kind of natural sieve, which is found at the roots of every leaf on the tree. The common people wear little or no clothing; and when it rains, their only umbrella is formed of a number of palm-tree leaves sewed together by the edges into a shape resembling a cradle cut across, which covers their head and back. All processes of manufacture and handicraft are on the rudest possible scale, and carried on without what we term capital. The people only scratch the ground instead of ploughing it; they never apply any manure; their corn is thrashed by setting bullocks to tread upon it; the smith's anvil is the nearest stone, his bellows a rough goat-skin; a shoemaker tans the raw hide one day, and makes shoes of it the next, sitting the whole time at the door of his customer; the weaver's apparatus needs but the shadow of a tree for shelter, and it can be removed at an hour's notice to any other tree which is more convenient. Even their distillery needs only an earthen kettle, some cold water, and a few bamboo reeds for a worm; and with these they produce liquors as intoxicating and pernicious as any manufactured by the science of Europe. This absence of skill in all the processes of industry, renders the labour of the working man of very slight value: hence he never receives more than what is barely necessary for subsistence; and the mass of the people are consequently at the lowest ebb in regard to domestic accommodations or mental acquirements.

Similar as the bulk of the population is, there are not wanting scattered tribes and families dexterous both in cunning and crime. In the accounts of all travellers, it is mentioned that there is no possibility of travelling in almost any part of the interior in safety without a guard and retinue of servants. The roads, if they can be called such, are hardly-discernible tracks, quite unfitted for wheel-carriages, and travellers must therefore ride on horseback, or on the backs of elephants, or be carried in palanquins—a species of litter supported on men's shoulders. There being also no inns in India, each traveller is obliged to carry tents and provisions for daily use. In the states of Bhopaul, Oude, Gwalior, and the Company's possessions in the Doab, as well as in some other quarters, there exist hordes of wretches called Thugs, who infest the roads, and carry on a methodic system of murder, for the sake of plunder. They kill by strangling their unhappy victims. The Thugs form a peculiar race, and practise their murders, as is alleged, from a religious principle; at all events they attach no idea of criminality to the offence. They have practised the trade for centuries, and are with difficulty restrained within bounds by the European forces.

Independently of the efforts of the Bishop of India and the religious establishment with which he is connected, the Church of Scotland and other bodies of Christians have for some years been putting forth their exertions to attempt the conversion of the native pagan races, and consequently to elevate their condition. But on the whole, very little success has crowned their well-meant labours; the loss of caste, which inevitably follows the abandonment of the Hindoo faith, may be stated as a barrier to conversion which no power of persuasion can remove; in short, it has been proved beyond the possibility of doubt, that to Christianise India the people must in the first place be instructed in secular knowledge. Aware of this fact, attention is beginning to be directed to the education of the young. Fortunately, the general population throughout Bengal and Bahar, where investigations have been made, are zealously anxious for instruction in useful knowledge, as well as to learn the English language.

Until within the last few years, the intercourse with India was carried on by means of vessels belonging to the East India Company or private traders, which made the passage in about five months by the Atlantic and Cape of Good Hope. This most tedious route is still pursued by trading vessels; but the more expeditious route by the Mediterranean, Egypt, and Red Sea, to Bombay, is adopted for mail conveyance and passengers who desire a quick transit. The line pursued is across France to Marseilles; thence by steamboat, touching at Leghorn and Naples, to Malta; and by another steamer from Malta to Alexandria; or from Southampton direct by steamer to Alexandria; from Alexandria by canal to the Nile, and onwards by boat to Cairo; thence by land to Suez; down the Red Sea from Suez to Bombay, touching at Mocha—total length of time from London to Bombay from thirty-five to forty days!

The circulating medium of India consists of gold and silver coins, paper-money, and cowries. The most common silver currency is the new coinage of Calcutta. Potdars, or money-changers, are a common class in every town, and sit generally in the open air with heaps of cowries placed before them. Cowries are small shells, which, not being depreciable by imitation, form a good medium for buying and selling among the lower classes. Their value varies in different places. The following is their value in Calcutta:—4 cowries 1 gunda; 20 gundas 1 pon; 32 pons 1 current rupee, or 2s. sterling (2560 cowries); 10 current rupees £1 sterling. The sicca rupee is 16 per cent. less in value than the current rupee, which is an imaginary coin. The Bombay rupee is valued at 2s. 3d.; a pagoda is 8s. The British government now supplies a commodious coinage, the more common silver coin being the rupee, which nearly resembles our half-crown.

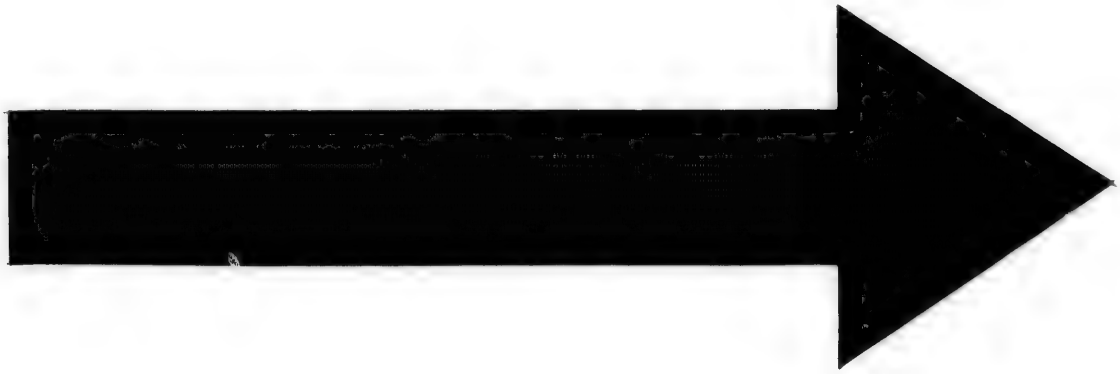
AFRICA.

This is one of the great divisions of the globe—the second in point of size, but by far the least important as regards the civilisation and progress of the human species. It is situated in the eastern hemisphere, to the south of Europe, and the south-west of Asia, and lies between latitude 37° north, and 34° 50′ south, and longitude 17° 30′ west, and 51° 30′ east. It is of an irregular triangular form, with the vertex towards the south, having the Mediterranean on the north, the Isthmus of Suez, Red Sea, and Indian Ocean on the east, and the Atlantic on the west. It is thus almost entirely insular, the connecting isthmus being only 72 miles across, of no great elevation above the sea-level, and even in part occupied by salt-lakes and marshes.

The bounding coast-line is marked by few indentations or projections; the most important gulf being that of Guinea on the west; and Capes Bon, Verde, Good Hope, and Guardafui, the extreme points respectively on the north, west, south, and east. The greatest length of the continent, from north to south, is about 4985 miles; greatest breadth, from east to west, 4615; and area, including the islands, not less than 11,854,000 square miles.

SUPERFICIAL FEATURES.

Respecting the physical aspect and construction of Africa, our information is extremely limited; all that is known, with any degree of accuracy, being parts of Morocco and Algiers in the north, certain points in the seaboard of Senegambia, Upper and Lower Guinea, Cape Colony, the hill country of Abyssinia, the valley of the Nile, and certain tracks or lines across the Sahara, or Great Desert. All description beyond these is mere conjecture, or the not very credible reports of natives and caravans. It would appear, however, 1st, That the triangular region south of the Kong, Cameroon, and Donga ranges, is a high dry table-land, hemmed in by mountains on all sides, and descending by steps to the sea-shore, which is in most parts rocky, and but partially fringed by narrow belts of sand. The bounding chains on the north rise, in the Cameroons, to a height of 13,000 feet, and probably much higher in the Dongas. Nothing is known of the Lupatas, or 'Backbone of the World,' on the east, save that they skirt, almost unbroken, the entire sea-coast; the hills of Cape Colony rise, from Table Mount, 3582 feet, to the Snieuveldt, 7400, and thence to the Nieuveldt, 10,000 feet, the intervening spaces being shrubby *kloofs*, or valleys, and broad grassy terraces, or *karoos*. Cape Colony is, on the whole, an undulating country, enjoying a fine climate, by no means well-watered, and often subjected to destructive droughts. (See p. 278). Of the west coast, we learn that it is rather arid and sandy in the Namquas region; but, according to Dr Tams, the coast of Lower Guinea is generally rocky, and wooded



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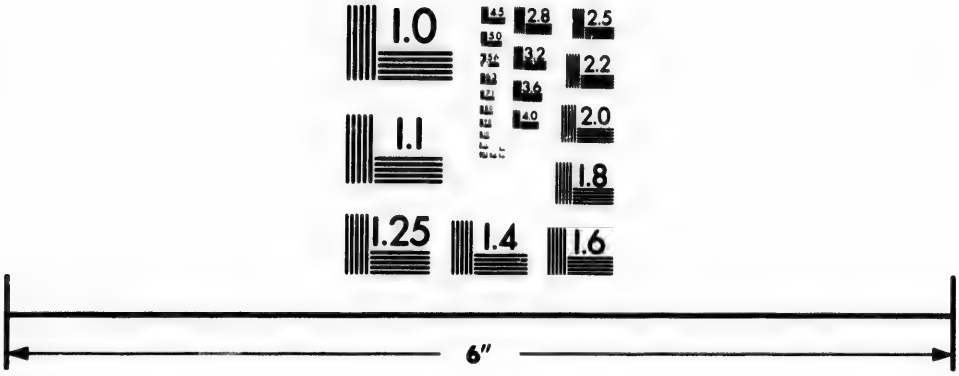

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to the water's edge, unless at the river embouchures, and there it is composed of swampy impenetrable jungle.

2d, North of the Kong and Donga mountains, onwards to the frontiers of Morocco and Algiers, extend the great deserts of Sahara and Libya—constituting one vast plain, but little interrupted by undulations. This region presents three distinct series of aspects—namely, tracts of loose drifting sand, unrelieved by a single shrub; districts covered less or more with gravel and shingle, and bearing dry prickly shrubs, and a scanty herbage; and oases of light pulverulent soil, watered by springs, and studded with clumps of palms, dates, pomegranates, and other tropical trees. 'Instead of a torrid region,' says a writer in the Edinburgh Review, 'where boundless steppes of burning sand are abandoned to the roving horsemen of the Desert, and to beasts of prey, and where the last vestiges of Moorish civilisation expire long before the traveller arrives at Negroland and the savage communities of the interior, the Sahara is now ascertained to consist of a vast archipelago of oases; each of them peopled by a tribe of the Moorish race or its offsets, more civilised, and more capable of receiving the lessons of civilisation, than the houseless Arabs of the Tell [the mountainous tract lying between the Great Desert and the sea]—cultivating the date-tree with application and ingenuity, inhabiting walled towns, living under a regular government, for the most part of a popular origin—carrying to some perfection certain branches of native manufactures, and keeping up an extensive system of commercial intercourse with the northern and central parts of the African continent, and from Mogador to Mecca, by the enterprise and activity of their caravans.'

3d, The mountainous district of the Tell, lying between the Desert and the Mediterranean—a region wholly composed of the Atlas chain, and its subordinate ridges. Where the hills fall towards the Atlantic in Morocco, the country becomes somewhat flat; but, eastward, it is hilly, and diversified only by narrow valleys and ravines. On the Mediterranean side of the elevation, the climate, produce, and aspect are somewhat similar to those of Southern Europe; but the other side is hot and arid, and insensibly passes into the Sahara. Mount Atlas attains an elevation of 11,400 feet, but some peaks in the chain rise much higher, and, according to recent accounts, seem to be permanently covered with snow—a fact which would seem to indicate an altitude above 15,000 feet.

4th, The region skirting the Red Sea, which comprises the hilly and not unfertile countries of the Galles and Abyssinians; Nubia, which, with the exception of the valley of the Nile, here comparatively narrow, is also hilly, and somewhat dry and arid; and Egypt, which consists of the alluvial valley and delta of the Nile, fenced on the west by low hills and desert, and on the east partly by the hills which skirt the Red Sea, and partly by the sandy desert which forms the Isthmus of Suez, and stretches onward into Arabia.

GEOLOGY—HYDROGRAPHY.

Respecting the *lithology* of Africa we know little, and that little only from observations made cursorily and at distant intervals. We know that the deltas of the Nile and Niger are formations recent and still in progress; and that the deserts of Sahara, Libya, and Egypt consist of sands, gravel, silicified woods, and other petrifactions, which indicate a sea-bottom, upheaved at no very distant date. Granite, syenite, and porphyry abound in Abyssinia and Upper Egypt, and in Lower Egypt the nummulite limestone is the prevailing formation. Rocks of volcanic origin are abundant on the Red Sea, which seems still to be the seat of igneous forces. The Atlas range are chiefly granitic and primary; and sandstones of transition date were observed on the banks of the Niger during the model-farm expedition of 1841. In Cape Colony sandstones prevail, which seem to be transition or older secondary; and some specimens now before us, from Caffraria, are evidently primary. Gold, silver, copper, lead, and iron seem to be plentiful, if we can regard the ornaments of the natives as evidence; indeed we have recent testimony, from an accredited explorer of the Russian government, that in the interior of Guinea auriferous sands are abundant, and apparently richer in produce than the deposits of Siberia. Natron has been long known to the inhabitants of the deserts, and salt, apparently collected from salt-lakes, forms an important article of commerce in the interior.

The *islands* connected with Africa are, with one exception, small, and generally far removed from the mainland. In the Indian Ocean are—Madagascar, separated from the continent by the channel of Mozambique, having an area of 230,000 square miles, or more than that of France, rich in mineral and vegetable produce, and with a population of 4,500,000; the important islands of Bourbon and Mauritius, each having an area between 800 and 900 square miles, with populations respectively 92,000 and 106,000, and fertile in every species of tropical produce; the minor groups of Comoro, Amerante, and Seychelles, north of Madagascar; and Socotra off Cape Guardafui, with an area of 1000 square miles, and a population of about 4400. In the Atlantic are—the volcanic group of Tristan da Cunha, occupied by a few British squatters; Ichaboe and other islets, along the south-west coast, recently ransacked for guano; the rocky islet of St Helena, 28 miles in circumference, and from 600 to 1200 feet high; the equally solitary volcanic rock of Ascension, recently garrisoned as a station for the slave cruisers; the densely-wooded isles of Annobon, St Thomas, and Fernando Po, in the Gulf of Guinea—the last rising in Clarence Peak to an altitude of 10,600 feet; the Cape Verdes, a rugged group of volcanic origin, rising in the still smouldering crater of Fogo to 7840 feet; the Canaries, consisting of seven principal islands, with an area of 136,000 square miles, and a population of 240,000, also of igneous origin, and rising in Teneriffe to an altitude of 12,182 feet; Madeira, 46 miles by 7, with a population of 113,000, composed of volcanic trape, which attain an elevation of 4400 feet, and celebrated for its delightful climate and wines; and lastly, the Azores, a numerous cluster, likewise of igneous birth, and rising in the Peak of Pico to 7000 feet, rich in tropical fruits and wines, with a population of 250,000.

Respecting the *hydrographical features* of the continent, little is known beyond the Nile and Niger; the existence of lakes Tchad and Dibbie in Soudan, Dembea in Abyssinia, and the salt-lakes of Tunis. All that can be said of the rivers Zaire, Congo, Zambeze, Gaboon, &c. or of the lake Maravi, and so forth, is little better than conjecture. The Nile is valuable principally as the fertiliser of Egypt, as described in a subsequent section of the present sheet. By means of a recently-cut canal, it is open to flat-bottomed boats from the sea at Alexandria to Cairo, and from this to the cataracts by the rude shallops of the country. The Niger discharges itself, by upwards of twenty mouths, through a low accumulating delta, which greatly impairs its utility as a means of communication with the interior; nevertheless, during the late unfortunate expedition, the Albert steamer ascended with little difficulty to Egga—a distance of 850 miles from the sea.

CLIMATE—BOTANY AND ZOOLOGY.

The *climate*, as might be expected from the position of the continent, is wholly that of the torrid zone, with the exception of a belt on the north and the extreme southern projection. 'It may even be said that the influence of this tropical climate is felt over a great part of those countries which their northern situation should exempt from it; for it is really only that strip of Barbary which the Atlas protects from the hot winds of the Desert, and that part of Hottentot-land protected by the Nieuveldt, and other mountains near the Cape, that enjoy the advantages of countries situate within the temperate zones. With the exception, therefore, of these small and narrow tracts, of those regions in the

interior to which their elevation imparts the coolness of higher latitudes, and the borders of the great lakes and rivers, every part of Africa is burnt up by continual heat, and the continent generally may be regarded as the warmest region of the globe. Nothing moderates the heat and the dryness but the annual rains, the sea winds, and the elevation of the soil; while in the well-watered regions, the moisture, combined with the heat, though productive of the most luxuriant vegetation, are extremely deleterious to man.'

The *vegetation* of Africa, without raising any question as to what may have been introduced from other continents, is decidedly less varied, and more unique, than that of Europe or Asia. Along the Mediterranean seaboard it greatly resembles that of Southern Europe; and wheat, barley, maize, rice, the grape, orange, fig, olive, and date, thrive to perfection. In Upper Egypt, Nubia, and Abyssinia, the characteristic plants are gum-yielding acacias, the cassia or senna-shrub, coffee, ginger, turmeric, cardamoms, the lotus or jujub, and the nelumbium or water-lily. Cape Colony is distinguished for its heaths, proteas, pelargoniums, mesenbryanthemums, stapelias, crassulas, euphorbias, aloes, cactuses, thorn-apple, mimosa, and other prickly shrubs; and yields also luxuriantly such plants as have been introduced by the colonists—namely, vines, currant-grape, oranges, peaches, apricots, pears, apples, and other garden fruits known in the warmer parts of Europe, with tobacco, pine-apples, and tea, attempted by the Dutch. In the other known parts of the continent, the vegetation is strictly tropical, and often peculiar. Here flourish palms and dates, the banyan, gigantic adansonia, the dragon-tree, banana, papaw, tamarind, anona, sugar-cane, cotton-tree, cassava, tallow-tree, maize, manioc, yam, ground-nut, melon, pine-apple, and other forms native to warm regions; while in the islands are cultivated chiefly the vine, orange, melon, coffee, and sugar-cane.

The *Fauna*, as might be expected from the insulated nature of the continent, is in many instances peculiar; several of its forms being found in no other region. Among the more characteristic may be mentioned numerous apes and monkeys; the lion, panther, leopard, and other felinæ; the hyena, jackal, racoon, &c.; numerous species of antelopes and gazelles in the south; the buffalo, camel, dromedary, and giraffe; the horse, zebra, quagga; the elephant, rhinoceros, hippopotamus, and masked-boar; seals, dolphins, and other cetacea. Of *birds*—eagles, griffons, vultures, and numerous birds of prey; the ostrich, bustard, and guinea-fowl; the parrot family in great abundance; the flamingo, pelican, secretary-bird, and crane; the cuckoo, swallow, nightingale, and quail, which are only summer visitants in Europe. Of *reptiles*—crocodiles, alligators, monitors, &c.; serpents in great variety, many of which are poisonous; lizards and chameleons; and various species of turtle. *Fish* are abundant in all the rivers and seas, and present forms unknown to Europe; crustacea and shellfish are equally abundant. Africa possesses no useful insects, but has instead the locust, scorpion, termite, and scarabæus of ancient Egypt.

POPULATION—INDUSTRY.

The *inhabitants*, vaguely estimated at 100,000,000, belong wholly to the *Ethiopic* and *Caucasian* varieties of our species: the former including all the dark-coloured native tribes, by whatever name they are called, from the Sahara and Abyssinia on the north to the southernmost extremity; the latter, the Egyptians or Copts, the Abyssinians, Arabs, Berbers, Moors, and other families arising from admixture of these. The *religion* of the negroes is Fetichism, or the worship of natural objects, animate or inanimate; the Arabs, Moors, &c. are Mohammedans; the Copts and Abyssinians observe a corrupted form of Christianity; and the European settlers are Roman Catholic or Protestant, according to the mother-country from which they come.

Civilisation is only to be met with in the settlements of the Europeans; the condition of the Moors, Arabs, and Egyptians, is scarcely entitled to rank higher than that of semi-civilisation, while all the other native tribes are little in advance of the lowest barbarism. The arts are exercised only on the northern coasts, where the Moors manufacture silk, cotton, leather, and linen. An active commerce is carried on by them with the maritime nations of Europe; and by means of caravans, a traffic, fully as important, with the interior, to which they convey their own products and those of Europe. The wants of the savage races are exceedingly simple, and most of the articles used by them are prepared by themselves. Commerce, however, with Europeans has taught them new wants, and increased their list of necessaries; among which may now be reckoned firearms, powder, brandy, tobacco, different kinds of cloth, glass-beads, coral, &c.; for which they barter slaves, ivory, gold, gums, palm-oil, dates, and other raw produce.

COUNTRIES—GOVERNMENTS.

The foreign powers having possessions in Africa are—*Britain*, occupying Cape Colony, which was taken from the Dutch in 1806; the Mauritius, with the minor islet-groups of Amerante and Seychelles, taken from the French in 1810; the islets of St Helena and Ascension; Fernando Po, all but abandoned; and the settlements of Sierra Leone and Cape Coast: *France*, possessing the island of Bourbon, the settlement of Senegambia, and, since 1830, the somewhat dubious and expensive colony of Algeria:* *Portugal*, occupying some settlements on the Mozambique coast, the coast of Lower Guinea, and the west coast, the Cape Verde Islands, Madeira, and the Azores: *Spain*, to whom belongs the Canaries, and the forts or districts of Ceuta and Melilah, near the Straits of Gibraltar: the *Imaum of Muscat*, who claims Socotra, and some portions of Zanzibar: and *Turkey*, who holds merely a nominal superiority over Tripoli, Tunis, and Egypt.

Respecting the native states and governments, we know little or nothing; and what little is known is of no civilised interest. In fact, with the exception of Egypt, which lays claim to high historical interest (see HISTORY OF ANCIENT NATIONS), as well as to some recent progressive movement under Mehemet Ali, and our own colony at Cape Good Hope, there is no region within the limits of the continent to which we need direct particular attention. To these two countries, however—the former as now forming the overland key to our Indian territories, and the latter as an emigration field of some importance—we may appropriately devote a few pages of description.

EGYPT.

In point of local situation Egypt possesses various advantages. It lies in the north-east corner of Africa, in a salubrious part of that vast continent, presenting its northern base to the Mediterranean Sea, and bounded on the east by the Red Sea, which separates it from Asia. Through the whole land from north to south, a length of 900 miles, flows the Nile, a fine large stream rising in the inland kingdom of Abyssinia, and, from certain periodic floods, of great use in irrigating and fertilising the country. A large portion of Egypt consists of an alluvial plain, similar to our fertile meadow grounds, formed by the deposits of the river, and bounded by ranges of mountains on either side. The greatest breadth of the land is 150 miles, but generally it is much less, the mountain-ranges on either side often being not more than five to ten miles from the river. Anciently this territory was divided into three principal parts—Upper Egypt, which was in the inner or

* 'The conquest of Algiers,' says Russel, in his account of the Barbary States, 'has relieved the Mediterranean from the dread of piracy, though it will be long before any other advantage can be derived from this achievement by France. The climate is indeed good, and the soil rich; but the inhabitants of the adjacent country are regardless of treaties, strangers to the enjoyment of social life, addicted to plunder, and accustomed to consider war as their hereditary profession.'

southern part; Middle Egypt; and Lower Egypt, which included what was called the Delta, a low district of land on the shores of the Mediterranean, formed by the mouths of the Nile into the shape of the Greek letter Δ, or delta. These divisions are still appropriate, forming an aggregate superficies of 202,000 miles, of which only about 20,000 are susceptible of profitable culture.

The Nile.

The most remarkable natural object in Egypt is the Nile, which periodically overflows its low banks, and inundates the greater part of the country. The Nile is formed by the union of two streams in the upper country, the Bahr-el-Abiad (white river), and the Bahr-el-Azrek (blue river), in latitude 15° 40′ north. The former, rising in Abyssinia, to the south-west of lake Dembea, comes from the south-east, and was considered by Bruce as the Nile. The latter, however, which comes from the south-west, and is supposed to rise in the Mountains of the Moon, in the centre of Africa, brings down the greatest mass of water, and is considered as the true Nile. There were anciently reckoned seven principal mouths by which the waters of the Nile were poured into the Mediterranean; only those of Damietta and Rosetta are at present navigable; the others have been silted up. The distance from the confluence of its two head branches to the sea is about 1500 miles; from its highest sources probably not far from 2500 miles. At certain points in its course the Nile falls over a series of cataracts, or, properly speaking, descends a series of tumultuous rapids, for the fall is nowhere above two feet of sheer descent. The cataracts are not altogether a bar to navigation, as flat-bottomed boats which sail up the river may be drawn up by an extraordinary force.

The grand phenomenon connected with the Nile is its annual overflow of the banks which border it—an event looked for with as much certainty as the daily rising of the sun. These valuable inundations are owing to the periodical rains which fall between the tropics. They begin in March, but have no effect upon the river until three months later. Towards the end of June it begins to rise, and continues rising at the rate of about four inches a day, until the end of September, when it falls for about the same period of time. Herodotus, the Grecian historian, informs us, that in his time a rise of sixteen cubits was sufficient to water the country. At present, twenty-two cubits are considered a good rise. The towns are generally built in such a situation and manner as not to be overflowed by the inundation; and in some parts of the country there are long raised causeways upon which the people may travel during the floods. It is only in cases of an extraordinary rise that any villages are destroyed. The inundations, instead of being viewed as a calamity, are considered a blessing, for they are the cause of inexhaustible fertility. After the waters have subsided, the earth is found covered with a fine fertilising mud, which has been left there by the river. The whole valley of the Nile may be considered as an alluvial plain composed of the washed-down mud and sand of Central Africa, and it is therefore to these inundations that Egypt owes its existence.

In Upper and Middle Egypt there are immense numbers of canals on the left bank of the river. Mehemet Ali, the late pacha, opened many of the old canals, which had been closed for centuries, and dug new ones; among the latter, the canal of Mahmoud, connecting the harbour of Alexandria with the Nile, near Fouah, 48 miles long, 90 feet broad, and 18 deep, is a magnificent work. The Delta is bordered by a number of maritime lakes or lagoons, which at different periods have undergone considerable changes; some of them had been dried up, when, from various causes, their connection with the ocean, which had been interrupted, was again resumed, and the exhausted basins replenished with water. It might be supposed, that in consequence of the annual inundations, Egypt would be a wet or moist country; but the very reverse is the case. The waters are speedily dried up, and carried off as vapours by the winds, leaving the climate so remarkably dry, that meat in the open air will not putrefy, but be dried or shrivelled up. Rain, snow, thunder, or any of the common atmospheric phenomena, are seldom or never seen or heard.

Climate—Natural History.

In Egypt the harvests follow each other at the distance of about six or eight weeks, according to the different kinds of grain, leaving time in most cases for a succession of crops wherever there is a full command of water. The cold season commences with December, and continues for about two months. Early in February spring appears, when the atmosphere acquires a delightful warmth, and the trees put forth their blossoms. The period of summer may be said to commence in June, and to end at the close of September. The transition from the one season to the other is so imperceptible, that it is scarcely possible to say when the one begins and the other ends. During these four months the heat is intense; the fields to which the swelling river has not attained, are parched like a desert, and no green leaf is seen but such as are produced by artificial irrigation. Autumn, which is only marked by a slight diminution of temperature, commences about the middle of October, when the leaves fall, and the Nile retires within its channel; and till the approach of that season, which can only be called winter from its situation in the calendar, the face of the country resembles a beautiful and variegated meadow.

From the nature of the surface, and the universal aridity of the surrounding desert, Egypt is much hotter than most other countries under the same parallel. From March to November, the atmosphere is inflamed by a scorching sun and a cloudless sky, the average height of the thermometer being about 90°; during the other six months it is about 60°. At sunset, the winds fall, and the nights are generally cool, and the dews heavy. Except along the sea-shores, rain is a phenomenon in Egypt. At Cairo, there are on an average four or five showers in the year; in Upper Egypt, one or two at most; nor are they considered as beneficial to the agriculture of the country. Storms of thunder and lightning are still more uncommon.

In its geological features, Egypt presents great variety, including specimens of almost every formation, from the earliest to the most recent. Several granitic chains of hills stretch to considerable extent. These contain vast quarries of [illegible], from which the ancients drew the stupendous ma[illegible] required for their colossal statues and obelisks. Between Assouan and Esna lies the sandstone, or middle district, which supplied blocks for the temples; and beyond it, the northern or calcareous district stretches to the southern angle of the Delta. This last chain supplied materials for the Pyramids, and many public buildings. The limestone extends from Syene to the Mediterranean, and, in Lower Egypt, from Alexandria to the Red Sea, in the vicinity of Suez. Other valuable rocks are abundant in Egypt, and various precious minerals are found.

Anciently, the country was more generally fertile than in the present day, owing to the encroachment of the sands of the adjacent deserts, and the long period of desolation and mismanagement in which it has existed. Still, owing to the inundations, the lands are more than usually productive, and yield crops of wheat, barley, rice, millet, maize, flax, beans, cotton, tobacco, the sugar-cane, and other useful vegetables. Of fruits, the citron, lemon, pomegranate, apricot, banana or plantain, and the palm-date, flourish luxuriantly. The palm is cultivated to a large extent in the inundated and irrigated lands, and groves of it, yielding a delightful shade, are to be seen, consisting of several thousand trees. Another celebrated production of Egypt is the lotus, a species of water-lily, of great beauty, exhibiting broad round leaves, amid which the flowers, in the form of cups, of bright white and azure, expand on the surface of the waters. The roots of vegetables were

used as food by the ancient Egyptians. There is also the papyrus, not less celebrated than the lotus, and which furnished a material used as paper, before the invention of that article; it is, like the lotus, an aquatic plant, growing to the height of eight or ten feet amid the swamps of the Nile.

In zoology, the camel, so emphatically named the ship of the desert, has long been domesticated in the country. The giraffe, or cameleopard, has been occasionally seen. Amongst the ancients, the ichneumon was venerated with a species of worship. Ichneumons are domesticated in Egypt, where they perform the duties of our domestic cat, in ridding the houses of the smaller animals. The names of the crocodile and hippopotamus are familiarly associated with Egypt and the Nile; but the latter is now rarely or ever seen below the cataracts. A species of lizard, called the monitor of the Nile; the common chameleon; the lizard; the sorex, or shrew, and the jerboa; the goat, sheep, and the animals which figure in the Egyptian mythology, such as the dog, ape, buffalo, &c.—still belong to the zoology of the country. Of birds, the ostrich, the ibis, of which there are several species, and the Egyptian vulture, are most famous. With respect to fishes, the country presents nothing remarkable, with the exception perhaps of the polypterus or bony-pike of the Nile, the only existing analogue of a numerous division of fishes long since extinct, and now only found fossil in the transition and secondary formations of the geologist.

Inhabitants.

The population of Egypt is composed of an extraordinary mixture of races, and of all shades of colour; some claiming to be descendants of the ancient Egyptians, though utterly degenerated; others being from Arabian or Saracenic intruders; and so on to the number of a dozen distinct races; also a variety of mixtures to whom no name can be assigned. The following is the common enumeration:—1. The race called Copts, the supposed descendants of the ancient Egyptians, and more certainly the feeble remnant of a once numerous Christian population. 2. The Fellahs, who compose the bulk of the labouring class, and who are supposed to be a mixture of ancient Egyptians, Arabians, and Syrians; they are rigid Moslems. 3. The Bedouin Arabs, the same in character, manners, and customs that they are everywhere, and apparently ever have been since the days of the patriarchs. 4. Arabian Greeks; that is, the descendants of ancient Greek colonists, who have lost their ancient language, and speak a kind of Arabic. Many of them are mariners; but, in general, they pursue the inferior and handicraft trades. 5. Jews. To these must be added, as inhabitants of Egypt, 6. Syrian-Greeks and Maronites, who have, within the last century, greatly increased in numbers, and have proved successful rivals of the Copts and Jews as merchants and agents. 7. Armenians. 8. Turks. 9. Franks or Europeans. 10. Moggrelins, or Western Arabs. 11. Ethiopians, and other Africans. The following is as near an approximation as can be obtained of the relative numbers of the different divisions of this motley crew:—Copts, 160,000; Arab Fellahs, 2,250,000; Bedouin Arabs, 150,000; Arabian Greeks, 25,000; Jews, 20,000; Syrians, 20,000; Armenians, 10,000; Turks and Albanians, 20,000; Franks, 4000; Ethiopians, &c. 7500; which amount in all to 2,666,500.

The Arabs have been divided into three classes:—First, the wild independent Bedouins, who occupy the Desert; second, the pastoral tribes, who feed their flocks upon the borders of Egypt, and occasionally enter the cultivated provinces; and lastly, the peasants or Fellahs, who are devoted to agriculture and the arts. The latter, who form the bulk of the population, are described as a fine race of men in their persons, active in agricultural employments, and possessed of many good qualities. In their dress and household economy in general, though not strangers to comfort, they are so to everything like luxury. Their food is very plain, and none but the higher orders, or those of dissolute lives, ever taste wine. The Arabs carry on the common trades of civilised life, but in a very unskilful and imperfect manner.

After enumerating the various Oriental races who inhabit Egypt, it need hardly be mentioned that Mohammedanism is the prevailing religion. Generally speaking, those who profess Christianity know nothing of its doctrines or moral precepts, the practice of their faith being confined to a few unmeaning ceremonies, and the repetition of a few established phrases. The whole people, high and low, are in a state of intellectual darkness; in the towns there exist among Jews, Franks, and Turks, a degree of comfort and some wealth; but in the country parts many of the inhabitants are in a state of deplorable wretchedness; and in several districts they are seen almost entirely naked, having neither regular food nor clothing, and no lodging except in holes or mud-built hovels.

State of the Country—Mehemet Ali.

Mehemet or Mohammed Ali, the modern reformer and late pacha of Egypt,* was born at Cavallo in Roumelia, a part of European Turkey. His parents, who were of a humble condition of life, had a family of sixteen children, of whom he was the youngest; and being a greater favourite than his brothers and sisters, he in early life became accustomed to indulgences, and to be impatient of the control of superiors. His youth, it has been related, was partly spent in the service of a tobacconist; but leaving this employment, which was unsuitable to his genius, he entered the Turkish army as a common soldier, at a time when troops were raising in his native district. This was the sphere of life in which he was calculated to shine. Distinguishing himself as a soldier by his bold and skilful conduct, he soon attracted the attention of beys, pachas, and the sultan himself; and having attained a prominent position in the bloody wars that distracted Egypt under the Mamelukes, he rose to be pacha, or viceroy, of Egypt, one of the highest posts of honour in the whole Turkish empire. On getting the command of that province, he speedily showed that he was no ordinary man. He established a regularly-paid, disciplined, and armed military force, on the European plan, instead of the irregular bands of men serving as soldiers in Egypt. The remnant of the Mamelukes, that remarkable body of men, which, since the days of Saladin, had practically governed Egypt by overawing the vice-regal authority, he annihilated, and thus became the uncontrolled lord of the land of the Pharaohs, Ptolemies, Cæsars, and Caliphs. By the strictness of his government, he rendered Egypt as safe to travellers as any ordinary civilised country. Agriculture, commerce, manufactures, all engaged his attention; and though his reforms were accomplished with a despotic hand, perhaps with no small degree of cruelty, still he prodigiously advanced the cause of civilisation and improvement in Egypt, and opened the way for further and more important reforms.

It is incontestable that Mehemet Ali did much to further the advancement of civilisation in modern Egypt; but the whole of his efforts at the same time tended to personal aggrandisement, and to the complete subjection of the people to his will. In order to maintain his authority, he raised troops from amongst the male population by the most tyrannical means; and so much was this forced military service detested, that great numbers of young men mutilated themselves, by destroying an eye, or cutting off one or more fingers, in order to escape the conscription. 'His revenue,' says Mr Lane, speaking of the pacha in 1836, 'is gene-

* Mehemet, who is now at the advanced age of eighty-five, resigned in favour of his son Ibrahim, who was formally invested with the government of Egypt by the Turkish sultan in September 1848. Ibrahim, who has all along been the chief pride of his father, survived this elevation only for a few weeks—dying on the 10th November 1848 at the age of fifty-nine. Achmed, the son of a younger brother of Ibrahim, and grandson of Mehemet, is now viceroy and vizier of Egypt, acting of course in the spirit and under the influence of his grandfather.

rally said to amount to about £3,000,000 sterling. Nearly half arises from the direct taxes on land, and from indirect exactions from the fellaheen (fellahs or agriculturists), the remainder principally from the custom-taxes, the tax on palm-trees, a kind of income-tax, and the sale of various productions of the land [no one being permitted to export corn or cotton but himself]; by which sale the government, in most instances, obtains a profit of more than 50 per cent. Mehemet Ali has increased his revenue to this amount by the most oppressive measures. He has dispossessed of their lands all the private proprietors throughout his dominions, allotting to each, as a partial compensation, a pension for life proportioned to the extent and quality of the land which belonged to him. The farmer has therefore nothing to leave to his children but his hut, and perhaps a few cattle and some small savings. The direct taxes on land are proportioned to the natural advantages of the soil. Their average amount is about 8s. per feddan, which is nearly equal to an English acre. But the cultivator can never calculate exactly the full amount of what the government will require of him: he suffers from indirect exactions of quantities (differing in different years, but always levied per feddan) of butter, honey, wax, wool, baskets of palm-leaves, ropes of the fibres of the palm-tree, and other commodities; he is also obliged to pay the hire of the camels which convey his grain to the government shooneh (or granary), and to defray various other expenses. A portion of the produce of his land is taken by the government, and sometimes the whole produce, at a fixed and fair price, which, however, in many parts of Egypt, is retained to make up for the debts of the insolvent peasants. The fellah, to supply the bare necessaries of life, is often obliged to steal, and convey secretly to his hut, as much as he can of the produce of his land. He may either himself supply the seed for his land, or obtain it as a loan from the government; but in the latter case he seldom obtains a sufficient quantity; a considerable portion being generally stolen by the persons through whose hands it passes before he receives it. It would be scarcely possible for them to suffer more, and live. It may be hardly necessary, therefore, to add, that few of the fellahs engage with assiduity in the labours of agriculture, unless compelled to do so by their superiors. The pacha has not only taken possession of the lands of the private proprietors, but he has also thrown into his treasury a considerable proportion of the incomes of religious and charitable institutions, deeming their accumulated wealth superfluous. He first imposed a tax (of nearly half the amount of the regular land-tax) upon all land which had become a *wuckf* (or legacy unalienable by law) to any mosque, fountain, public school, &c.; and afterwards took absolute possession of such lands, granting certain annuities in lieu of them, for keeping in repair the respective buildings, and for the maintenance of those persons attached to them, as nazirs (or wardens), religious ministers, inferior servants, students, and other pensioners.' Mr Lane subsequently mentions that sometimes the poverty of parents causes them to sell their children to any one who will purchase them, which presents a shocking idea of the oppressed and degraded condition of the humble order of modern Egyptians.

In pursuing his schemes of improvement and family aggrandisement, Mehemet Ali acted as a despotic monopolist in all matters relating to both agriculture and commerce. He not only dictated what article of produce shall be cultivated, but the price at which it should be sold. According to Dr Bowring, it appears that in 1834, the country produced about 500,000 quarters of wheat, 450,000 quarters of dourah, 400,000 of beans, 280,000 of barley, and 80,000 of maize. Of wheat, however, the produce sometimes rises to 1,000,000 of quarters. The average price of wheat is from 20s. to 27s. per quarter at Cairo, but in years of scarcity it rises to 60s. Egypt is generally an exporting country, though sometimes, as in 1837, forced to draw supplies from abroad. The cultivation of cotton was introduced by Mehemet, and succeeds well, the exports of this article in 1834 having been 200,000 cwts.; and in 1843, 18,000 tons. Flax-growing has also been revived, and exports to some extent have been annually made to Britain since 1839. The late pacha also endeavoured to extend the cultivation of sugar, introduced improved sugar-mills, and brought persons from the British colonies to distil rum. He also invited Armenians from Smyrna and the East Indies, to teach his people how to cultivate opium and indigo, and prepare them for the market. There are about 2,000,000 of date-trees in Egypt, each of which yields by its fruit from 8s. to 16s. per annum. A few attempts have been made to introduce the vine. Onions are still produced and consumed in prodigious quantities, as in the days of Herodotus. The pacha established model farms, with improved ploughs, pumping apparatus, &c.; but even his despotism could scarcely induce the people to abandon their ancient rude processes and implements.

The pacha was also a great manufacturer. He built large mills, and procured skilled workmen, at a great expense, from France, Italy, Germany, Belgium, and Britain, to conduct them. He had manufactories of cotton yarn and cotton cloth, woollens, carpets, ironware, muskets, cannon, bayonets, gunpowder, &c. which are still carried on by his successor. All these establishments are believed to have been attended with loss, and in some cases the loss was heavy. The spinning-mills for cotton were the most extensive of the manufactories. There were twenty-two of these in 1839, which, according to Dr Bowring, produced about 210,000 rottoli of yarn monthly, of various qualities, from coarse to 'very fine.' The Cairo rottoli is, we believe, just equal to the British pound, while the Alexandrian rather exceeds two pounds. The pacha had three manufactories of arms, which turned out 1600 muskets and bayonets per month. The largest one was managed by an Englishman, as indeed were most of the mills, factories, water-works, and other machinery. These and other innovations and improvements are still carried on with unsubdued ardour by Mehemet, whose retirement from office is rather nominal than real. He is still, though considerably upwards of fourscore, the centre and spirit of all reforming vitality and progress throughout the country: he maintains modern Egypt.

All travellers represent Mehemet as a person of plain and affable manners in private life, and fond of his family. Dr Bowring speaks of him as follows:—'Mehemet Ali was forty-six years old before he had learned either to read or to write. This he told me himself. I have heard that he was taught by his favourite wife. But he is fond of reading now; and one day, when I entered his divan unannounced, I found him quite alone, with his spectacles on, reading a Turkish volume, which he was much enjoying, while a considerable pile of books was by his side. "It is a pleasant relief," he said, "from public business; I was reading some amusing Turkish stories" (probably the Arabian Nights); "and now let us talk—what have you to tell me?" There is a great deal of sagacity in Mehemet Ali's conversation, particularly when he knows or discovers, as he usually does, the sort of information which his visitor is most able to give. He discourses with engineers about mechanical improvements—with military men on the art of war—with sea-officers on ship-building and naval manœuvres—with travellers on the countries they have visited—with politicians on public affairs. He very willingly talks of foreign countries, and princes and statesmen, and is in the habit of mingling in the conversation all sorts of anecdotes about himself, and the events connected with his history. His phrases are often poetical, and, like most Orientals, he frequently introduces proverbs and imagery. I heard him once say, speaking of the agriculture of Egypt, "When I came to this country, I only scratched it with a pin; I have now succeeded in cultivating it with a hoe; but soon I will have a plough passing over the whole land."

Oppressed as modern Egypt is, it is gratifying to reflect that it is improving in various respects. Education, after European models, has been introduced; and printing is now executed at Boulac, near Cairo, the press having there produced more than a hundred different books in the Arabic language, for the use of the military, naval, and civil servants of the government. A newspaper and an annual almanac are also regularly printed at Boulac. Another printing establishment has also been set down in Alexandria, and promises to be of vast service to the inhabitants, as well as to strangers and travellers. A considerable export and import trade is now carried on, the raw produce of the country being exchanged for the manufactured woollen, cotton, silk, and other goods of Europe. The cause of national regeneration is further advanced by the regular transit of European passengers on their overland route to and from India.

For administrative purposes, the country is divided into 24 departments, which are subdivided, according to the French system, into arrondissements and cantons. The capital is Cairo, an inland city, with a fluctuating population of 250,000. The chief ports are Alexandria, with a population of 60,000, Damietta and Rosetta on the Mediterranean side; and Suez and Cosseir on the Red Sea. The annual exports from Alexandria are estimated at £2,500,000; the imports at £3,000,000.

CAPE COLONY.

The extreme southern projection of the African continent was formally taken possession of, in the name of Great Britain, in the beginning of the seventeenth century. No settlement, however, ensued this formality. In 1650, the district was colonised by the Dutch, who afterwards made settlements in Saldanha Bay and elsewhere; and disregarding, like other colonising adventurers, the rights of the natives, gradually extended their encroachments, till their territory reached nearly to the boundaries of that now known by the name of *Cape Colony*. In 1795, the Cape was taken possession of by British forces; but at the peace of Amiens, in 1800, it was evacuated, and restored to its former masters. In 1806, it was again taken by the British, to whom it was finally ceded at the general peace in 1815. Since then considerable numbers of our countrymen—Scotch, English, and Irish—have made it their home; where, following chiefly a rural life, they rear herds, flocks, and corn; export wool, hides, horns, and ivory; and attempt the preparation of wine, tobacco, aloes, and some other drugs and dyestuffs. The aboriginal tribes consisted of Hottentots and Fingoes, Bushmen and Caffres, of whom the two former have become subject to the white settler, and been greatly reduced in numbers; while the latter have reluctantly retreated into the wilderness, contesting on the frontier whether barbarism or civilisation shall there prevail. The population of the colony—amounting to upwards of 160,000—consists, therefore, of our countrymen, of the Dutch boers or farmers, the subdued natives, and a number of half-castes—a motley community no doubt, but one which contains within it all the elements of steady and successful progress, if the nature of the country be such as will ultimately repay their exertions. The administration of public affairs is vested in a governor, aided by executive and legislative councils. In 1842, the gross revenue of the Cape amounted to £149,920, and the expenditure to £142,229; the last, however, was exclusive of the expenses incurred at home on account of the colony.

With respect to the eligibility of the Cape as an emigration field, numerous and contradictory opinions have been offered—interested parties describing it in unmeasured terms of approbation; while others, unsuccessful in their endeavours to settle, decry it as an arid and sterile waste. The following account, taken from 'Waterston's Encyclopædia of Commerce,' and the manuscript notes of an intelligent friend, who travelled the country in the early part of 1846, seem to contain as fair and impartial a statement as it is possible to give within our narrow limits:—

'The Cape territory,' says the former of these authorities, writing in 1843, 'is in general rugged and barren, and deficient in the means both of internal and external communication. But a portion of the east coast is of a different character, more especially towards the north-east frontier, including the district of Albany, where the country is well-wooded and watered, and favourable for agriculture and grazing. The west coast, and a great portion of the rest of the country, consist of barren mountains and arid plains; one of which, the Great Karroo Desert, a high parched table-land, separating the Cape Town district from the finer country to the north-east, extends about 100 leagues in length from east to west, and 30 in breadth. The climate, however, is one of the finest in the world; and were the aridity of the soil counteracted by irrigation, and the means of intercourse improved by the formation of roads, the character of the country would be very different, as the capabilities of the soil are naturally great.

The only parts thickly settled are the Cape and Stellenbosch districts—which contain about 3-8ths of the whole population—some parts of Worcester, Graaf Reynet, and the British settlements at Graham Town and Bathurst in Albany; the other portions are occupied chiefly by the Dutch *boers*. Nearly 225,000 acres are under crop, yielding annually about 540,000 bushels of wheat, besides smaller quantities of barley, oats, and rye; the remainder of the productive surface is chiefly open pasture land. The principal mercantile commodity is wine, of which about 1,518,000 gallons are made yearly, besides about 126,630 gallons of brandy. The vine is grown chiefly in the Stellenbosch district, and within forty miles round Cape Town; but the wines, except that made at Constantia, near Table Mountain, are almost all of very low quality. Of late years, part of the capital which was embarked in the wine trade has been transferred to the production of wool, which has thus risen into considerable importance.

The progress of the Cape Colony has of late years been materially impeded by the invasion of the north-east frontier by the Caffres, and by the extraordinary emigration of about 20,000 of the Dutch colonists to Natal, on the east coast. The departure of the farmers has produced a rise in the price of provisions at Cape Town, which has materially lessened the demand for ship refreshments, formerly a principal branch of trade at that port, and amounting to about £100,000 yearly. The chief of the other native exports are—wine (1,000,000 gallons), wool, hides and skins, horns, tallow, flour, wheat, bran, butter, whale oil and fins, aloes, ivory, besides which, coffee, sugar, tea, spices, and a variety of other articles, are shipped at second-hand from Brazil, Mauritius, India, and China. In 1836 the exports amounted in value to £384,383; the imports into the colony in the same year amounted to £891,162, chiefly from the United Kingdom. With the exception of foreign spirits (principally brandy), wines, and spices, the British imports consist almost wholly of manufactured goods, and of these upwards of one-third are cottons; the remainder chiefly woollens, apparel, silks, arms, hardware and earthenware.

The *ports* are few and in bad condition. The principal are, Cape Town, the capital and seat of government, in Table Bay, population 20,000; Port Elizabeth, in Algoa Bay, the shipping place for the east part of the colony; and Simon's Town.'

'A single glance'—we turn to the notes of our travelling friend—'at Cape Colony, particularly in its eastern and northern districts, to any one acquainted with the nature of the vegetable world, would be sufficient to convince him that it is essentially a dry country, and little adapted for agricultural pursuits. As in many parts of Mexico and Peru, succulent plants (*Cactaceæ*, &c.) greatly abound, and are associated with a similar aridity of climate. Bulbs are also very plentiful, and, like the preceding, are fitted by nature to lay up a store of moisture, when it can be had, against the long

season of drought. This dryness of climate is at once the blessing and curse of Southern Africa. Upon it depend the purity and salubrity of the atmosphere; there are no fens or jungles of rank vegetation, on which the sun may act, and eliminate those noxious effluvia which generate the fevers and agues of damp unreclaimed countries under a similar parallel. But while an immediate advantage is thus gained by the emigrant on the score of health, he is healthy to little purpose, so far as his labours as a husbandman are concerned. He cannot commit his seed to the soil in the well-founded hope of seeing it in good time come to the sickle. Heaven denies him rain, and he must lead water: but this artificial supply also frequently fails, and all his field labour is lost. Or if his dams and fountains dry not up, then runs he the risk of blight or *rust*, which will often sweep over his crops, and hopelessly destroy them in a single night. And should he escape the rust, still the locust may come, and devour stalk and ear together. The latter pest is so multitudinously voracious, that I have known nine acres of maize, ready for gather, entirely eaten up in the course of a few hours. No doubt much more corn might be grown in the colony than is at present reared, and years of famine, by prudence and foresight, forestalled by years of plenty; still, so uncertain and precarious is the growth of grain—particularly of wheat—in most of the districts, that Cape Colony cannot now be reckoned, nor will ever likely become, an agricultural or grain-growing country.

Being essentially pastoral in its character, let us take a view at its capabilities in this respect. In general, from the scanty nature of the "sweet-grass" herbage—exclusive of its uncertainty by drought—one to four acres are required to depasture a single sheep, more than double that area for a horse, and nearly four times as much for an ox or cow. This estimate comprehends good and bad land indifferently over the entire area of a farm. The large extent of ground thus necessarily requisite for pastural range has led to the practice of laying out the country into extensive farms, averaging from 6000 to 10,000 acres, or from nine to fifteen square miles. In many places it has been found impossible to apportion the whole land, even under such wide bounds, because of the want of water; and large tracts are still left out of occupancy from this cause. Families must consequently be kept far apart from each other, and this isolated condition proves a formidable bar to advanced civilisation. Even the villages in a country so divided, and without any mineral or manufacturing resources to form centres of population, must be few and far between—partaking of the character of mere trading posts between the distant farmer and merchant importer. The introduction of fresh blood and home-energy from the mother country may improve, and has already done much for the tone of society; but left to itself and to natural influences, the pastoral population has no tendency to advance beyond the rude and simple condition of shepherds. The country has been long enough settled to have become a "States" or a "Canada," if nature had not put in her veto, imperatively gainsaying such a consummation.

As a maritime country, its facilities are equally scanty and imperfect, compared with those of Britain and America. While these two countries are indented by numerous bays, gulfs, and inlets, Cape Colony presents a mural outline of coast, with scarcely an opening in it to admit a vessel to the interior, or a haven to give shelter from the seaward storms. There is not, in fact, a single navigable river opening on the coast, and no safe accessible harbour from Simon's Bay to Port Natal. Saldanha Bay, on the west coast, is the only complete haven possessed by the colony. This total inaptitude for inland navigation, and paucity of sea-board harbours, along a tempestuous coast, must ever operate as a check on commercial activity, and keep South Africa low in the scale of nations. At present, the want of roads also operates seriously against the success of the settlers; but granting that this evil were remedied—which it is not likely soon to be—the absence of anything like ports must ever make the means of commercial interchange both insecure and expensive. I have seen imported goods, which were selling at thrice their average value, reduced to their usual price in the course of a few days, by the arrival of long-expected vessels; and as suddenly, on the other hand, the report of several wrecks raise these goods to the most enormous charges—thus bidding defiance to all the schemes and calculations of the inland farmer who had his far-brought produce to dispose of.

Another serious evil, and one under which its border population have groaned for years without remedy, is the encroachments and depredations to which they are constantly subjected in consequence of the naturally defenceless state of the northern frontier. The most troublesome and dangerous of the depredators have of late been the Gaika tribe of the Amakou Caffres, and the part of the colony subject to their harassing aggressions the eastern borders. The farmers in that neighbourhood, who may be justly reckoned the most enterprising in the colony, have from their first settlement experienced the unwelcome intrusions and vexatious pilferings of their lawless neighbours, who, issuing forth in little bands, like wolves in the night, have seized and carried off into Caffreland countless herds of colonial cattle. To such an extent has this habit of plunder been carried, and so bold have become the depredators, that an open war has been forced on the colony, as the only means left for the redress of its grievances. This is not the only time that the Cape has experienced the horrors of war, and had its borders ransacked by ruthless invaders; and there is little doubt, however severe and pregnant with suffering to the settlers the present conflict may be, that British arms will ultimately prevail.

A general complaint throughout the colony is the scarcity of good servants: many things are left undone for which it offers abundant capabilities, from a deficiency of labour, as well as from the imperfect kind of labour to be found. Hottentots, Fingoes, and other coloured people, are the chief occupants of this walk; and are hired at from 5s. to 15s. a month, with rations. White servants are less numerous, and remunerated more highly—female domestics earning from £12 to £20 a year, and males from £18 to £30. All those introduced this season (1846) by the emigrant vessels from England have found places at such wages. But as these remarks lead insensibly into the advantages of the colony, I may now briefly allude to these.

He who can calmly contemplate and resolutely undertake expatriation from his native land, for the sake of an independence which its overcrowded walks of trade-craft deny, may realise in the Cape this desirable object. He is not foolishly to cherish high expectations either for himself or family; but if he condescend to look on himself and descendants as a nation of shepherds, and hazard those contingencies I have already noticed, most assuredly may he and his offspring enjoy the easy quiet life of such a race of men. Though not clothed in that freshness of verdure which renders home scenery so charming, the Cape possesses a much finer climate, a purer atmosphere, is not less salubrious, and yields abundance of all sorts of *fruits* found in the temperate zones, with many tropical ones in addition. But the leading advantage is its antithesis to Britain in its field of industry being unstocked: hence it is that no one in Africa need starve who is willing to use his hands, or can fail to find a profitable investment for capital, if he is cautious in its outlay. The farm-labourer will find his services eagerly sought after, and liberally paid; shepherds are in demand, and get from £30 to £40 a year; blacksmiths, masons, house and cabinet wrights, earn from 5s. to 7s. a day; indeed all sorts of labourers and mechanics will find employment and suitable pay, excluding those of course engaged in weaving, and other similar branches of industry, of which there is nothing of the sort in the colony.'

OCEANIA.

This term has been proposed by geographers to include the numerous islands scattered over the great ocean which extends from the south-eastern shores of Asia to the western coast of America. Oceania is separated from Asia by the Straits of Malacca, the Chinese Sea, and the Channel of Formosa; and from America by a broad belt of ocean, comparatively free of islands. It may be said to extend from latitude 50° south to 30° north, and from longitude 96° east onward to 115° west in the opposite hemisphere. It naturally divides itself into three great sections—Malaysia, Australasia, and Polynesia—whose aggregate area has been vaguely estimated at 4,132,000 square miles, and population at from 14,000,000 to 16,000,000.

MALAYSIA.

This division takes its name from the Malays, who are the principal inhabitants, and includes the archipelago immediately adjoining the south-eastern coasts of Asia, perhaps more generally known as the East India Islands. It lies between latitude 12° 40′ south and 20° north, and longitude 95° and 134° east; and consists of minor clusters and chains, intersected by straits and channels, the intricacy of which would render the navigation dangerous, were not the seas distinguished beyond all others by their pacific character, and by the uniformity of the prevailing winds and currents. The whole of Malaysia lies within the tropics; and there is, accordingly, a great uniformity of climate, of animal and vegetable productions, and in the character of the people. The islands are, throughout, of a mountainous nature—the highest point being Mount Ophir in Sumatra, 13,050 feet; and the Archipelago is traversed by several lines of volcanic action, which exhibits itself in the burning craters of Luzon, Java, &c. There are few extensive plains, abundance of jungle and unhealthy swamp, but no arid deserts; and where not cultivated, the better land is generally covered with forests of stupendous trees.

The *natural products* may be gathered from a detail of the chief exports, which are, in the *vegetable* kingdom—nutmegs, cloves, cinnamon, pepper, coffee, rice, sago, indigo, cotton, sugar, flax, tobacco, camphor, cassava, maize, gums, gutta-percha, turpentine, betel, cocoa, ginger, canes, rattans, areca nuts, bamboo, bread-fruit, teak, sandalwood, and other timber for building and cabinet-making; in the *animal*—ivory, wool, hides, horses, furs, pearls, edible birds'-nests, tortoise-shell, whale oil, sharks'-fins, ambergris, &c.; and in the *mineral*—gold-dust, tin, antimony, copper, iron, coal, diamonds, and other precious stones. Thus Malaysia is rich in every species of tropical produce, and, under a better system of rule, might be made one of the finest and most desirable regions in the globe.

The *inhabitants* belong to the Malay variety of the human species, but break into two or three races, having different depths of colour, straight, crisp, or woolly hair, and features less or more approaching those of the negro. They are generally arranged, according to their languages, into—Malays Proper, Javanese, Battaks, Bugis, Dyaks, Macassars, Sooloos, and other minor tribes. The foreigners or non-aborigines are chiefly Chinese, with a few Siamese, Hindoos, &c. from the

mainland of Asia. The *religion* professed by the Malays, Javanese, &c. is that of Islamism; Buddhism and Brahminism by the Chinese and Hindoos; Catholicism is practised by the Spanish and Portuguese subjects in the Philippines and Timor; Calvinism in the Dutch settlements; and polytheistic idolatry by almost all the independent tribes. There is nothing like *education*, and little deserving the name of civilisation in any part. *Industrially*, the growing of rice, cotton, coffee, &c. the gathering of raw produce, fishing, navigation, and, we may add, piracy, are the main employments in most of the islands.

As to *government*, the only civilised powers having possessions in Malaysia are the Dutch, Spaniards, and Portuguese. The Dutch possess or domineer over the whole of Java; the greater part of Sumatra, where they are continually extending their dominions; the Moluccas, or Spice Isles; and generally exercise a predominating influence over all the southern portion of the Archipelago. The Spaniards possess Luzon, and the greater part of the Philippine group; and the Portuguese retain only a portion of the island of Timor. During the last war, the British deprived the Dutch of Java and their possessions; but the whole were restored at the peace of 1815; and in 1825, Bencoolen, and the other British settlements in Sumatra, were exchanged with the Dutch for Malacca. Recently (December 1846) the small but apparently valuable island of Labuan, off Borneo, has been ceded to Britain, as a station for the India and China steamers; and important results are likely to arise from the procedure of Sir James Brooke at Saráwak in Borneo.

Britain has thus no direct political sway in Malaysia—a fact to be regretted, considering how little the European powers above-mentioned have done for the development—industrial or social—of these fine and fertile islands. Had they been retained in 1815, and the policy of Sir Stamford Raffles zealously carried out, this region would have now ranked next in importance to Hindoostan; for though less extensive, and more distant, it is equally fertile in every species of tropical produce, while its territories would have been preserved and governed with comparative little trouble or expenditure. It is true that Sincapore is the great entrepôt for the produce of the surrounding islands, and thus in some measure British influence may be felt where it is not avowed; but until our merchants and traders have effected an absolute location, as is likely soon to be in Borneo, and until the machinery of a superior civilisation be brought to bear upon the natural capabilities of the soil, as well as upon the character of the natives, it is impossible to regard even the finest of these islands as other than misappropriated and neglected wastes.

AUSTRALASIA.

Australasia, the central and largest section of Oceania, is situated between the equator and 47° south, and longitude 112° and 180° east, and includes Australia or New Holland, Van Diemen's Land, New Zealand, Papua or New Guinea, New Britain and New Ireland, Solomon's Islands, New Hebrides, and New Caledonia. Australia is the chief island in the group, measuring 2400 miles from east to west, and 1700 from north to south. The physical character of this vast island or minor continent, so far as yet explored, seems very peculiar: with the exception of some hill-ranges, it is generally flat, or but slightly undulating; and in many places the inclination is inward instead of outwards to the sea. There being a general absence of high grounds, clouds are not attracted over the land, and there is thus a deficiency of rain; the rivers are for the most part a series of standing brackish pools, and of no value whatever as a means of internal communication. The plains or grassy flats are of vast extent, and being but partially studded with trees, afford the finest sheep-pasture in the world, when not parched by a long-continued dry season. The climate in the north is strictly tropical; in the southern colonised districts it is said to be delightful—but liable to somewhat sudden changes, and occasionally to destructive droughts.

The *native vegetation* presents few features of interest—the most valuable being the araucaria or Norfolk pine; various species of eucalyptus, known as iron-bark, blue-gum, butted-gum, stringy-bark, &c.; the cedar and turpentine tree; varieties of causurina, as forest-oak, swamp-oak, &c.; the sassafras; curragong or cordage-tree; and others yielding gums, balsams, and manna. All the culinary vegetables and fruits introduced by the British colonists have flourished amazingly, and the settlements now enjoy every species of produce, from the vine, olive, pine-apple, &c. down to the humble gooseberry and raspberry of England. The original *Fauna* of the island is altogether anomalous: with the exception of the native dog or dingo, and a species of bat, all the quadrupeds are marsupial, or carry their young in pouches—the common forms being the kangaroo, wombat, opossum, &c. The ornithorhyncus is another of its peculiar forms; as also the emu, lyre-pheasant, gigantic crane, black swan, bower-bird, and others. Reptiles are numerous, and some of them poisonous; fishes are rife along the coasts, as also whales and seals; shellfish, of beautiful colours and elegant forms, are everywhere to be found; and insects are prolific to a nuisance, the most useful being the native bees, which are stingless. All the common domesticated animals have been introduced; and these, especially sheep and oxen, have thriven amazingly. The *geology* of the country is very little known; but limestone, marble, bituminous coal, pottery-clay, iron, lead, and copper—the latter metal in particular—seem to be abundant in certain localities.

The *aborigines* appear to be a deteriorated offshoot from the Malay variety of our species; are in a state of utter barbarism; and seem destined to disappear before the white settlers, who are almost wholly British, with a sprinkling of Jews and Germans. The only European power having possessions in Australasia is Britain, to which belong Australia, Van Diemen's Land, New Zealand, and the penal settlement of Norfolk Island. The other islands are very little known, and wholly in the occupation of the native dark-coloured races.

The *settlements* or *colonies* are those of New South Wales, established in 1788; Western Australia in 1826; South Australia in 1834; and North Australia in 1838. The adjacent island of Tasmania, or *Van Diemen's Land* (which occupies 24,000 square miles, or somewhat less than Ireland), is the seat of another British colony, planted in 1824, and is altogether a thriving settlement—being more hilly and better watered than Australia. *New Zealand*, composed of three contiguous islands, ranging from 1100 miles in length, with a breadth varying from 5 to 200, is also the seat of a British colony planted in 1840. The soil is fertile, and capable of yielding every species of cultivated produce; the climate mild and equable; and the vegetable and mineral resources of prime importance. It is to these settlements that we would now specially direct attention:—

NEW SOUTH WALES.

This colony includes a large portion of the east side of Australia; the settled portions chiefly embracing the district within 200 miles of the east coast between Port Macquarrie in latitude 31° 27′ south, and the Muroo River in 36°; and the Port Philip district on the south coast. The general appearance of the east coast from the sea is far from being inviting, presenting immediately on the shore a continuous front of bold cliffs and mural precipices, unbroken for many miles together; behind these, again, and running generally parallel with them, at an average distance of about forty miles, rises a chain of rocky, precipitous, and almost impassable mountains, extending along the whole eastern coast. These are called the Blue Mountains. The unpromising appearance of the shores of New South Wales is not removed upon landing. For five or six miles interiorly the land continues barren and rocky, presenting few other signs of vegetation besides

some thinly-scattered stunted shrubs and dwarf underwood. At this distance inward a marked change begins to take place; the soil improves, and begins now to be encumbered with tall and stately trees, which soon again thicken into a dense but magnificent forest, indicating, indeed, a more luxuriant soil than that passed, but scarcely less discouraging to the settler. Advancing inwards, however, from six to nine miles farther, another change takes place. You have cleared the forest, and the promised land lies before you, improving with every step you advance; now presenting an endless variety of hill and dale, covered with the most luxuriant vegetation; now extensive plains, resembling the finest parks in England—a resemblance which is made the more striking from their being similarly interspersed with magnificent trees, just numerous enough to add beauty to the land without encumbering it. The Port Philip district—the Australia Felix of Major Mitchell, who explored it in 1836—is altogether a finer country, less arid, more varied, and better wooded, but not so much so as materially to impede cultivation.

The government of New South Wales is conducted by a governor and a legislative and executive council: both of the two last, as well as the governor, are appointed by the ministry at home. The legislative council is composed principally of persons holding official situations, and these chiefly residing in the government towns. The executive council, again, is composed of persons filling the highest government appointments. There are, besides, a class of functionaries called police magistrates, distributed throughout the colony, and who take especial cognisance of offences committed by convicts, whom they have a power to punish by flogging or condemning to work in irons. Sydney is the chief seat of the colonial government, comprehending the supreme court, and the heads of all the civil and military establishments of the country. Being a colony of Great Britain, the laws by which New South Wales is governed are the same in their leading features with those of England, differing only in instances where such difference was found necessary to adapt them to the peculiarities of the country. Population, 190,000.

The external and domestic trade of New South Wales has scarcely yet emerged from a state of infancy; but it is fast gaining strength; and if no unforeseen circumstances should arise to check its prosperity, it will one day become, if it is not so even now, one of the most important of British settlements. Its leading export articles are wool, and seal and whale-oils; a great part of the latter is of that valuable kind called sperm-oil, produced by a description of whale found in the South Seas only. (See No. 44, Vol. I.) In the article of oil, which has only very lately become an object of serious consideration to the colonists, the improvement has been remarkably rapid, there being recently upwards of forty vessels, averaging a tonnage of nearly 10,000, belonging to, and sailing out of, Port Jackson alone, exclusively engaged in the whale-fishing. A striking evidence of the increasing prosperity of the colony, is the circumstance of its having in four years in some instances nearly, and in others more than doubled, the amount of its property in cattle and sheep, and also in the extent of its cultivated land.

We need not particularise the great and miscellaneous import and export trade of the colony, but confine ourselves to a few leading facts as an evidence of general prosperity. The imports, which amounted to £280,000 in 1826, had increased to £2,462,858 in 1841; whilst the exports from the colony, including the produce of the fisheries, had increased from £106,600 in the former year, to £2,004,385 in 1840. In 1824 the exports of wool amounted to 275,560 lbs.; in 1840 they were 9,668,960 lbs. In the Savings' Bank of New South Wales, the deposits increased from £24,469 in December 1835 to £127,000 in August 1840. In 1837 the revenue was £226,000; in 1841 it exceeded £270,000.

A large and profitable trade cannot fail to be ultimately established in wine, from vines which have been introduced as exotics. Already, from grapes grown in the vineyards of the colony, excellent wine might be produced, if anything like good management were exercised. From the peaches of New South Wales the finest brandy is distilled; so superior is this article that, if it were allowed to be imported into Great Britain, it would speedily supersede the use of the brandies of France and other high-priced spirits. Silk (from the abundance of the mulberry) and dried fruits, with other useful and valuable articles, as opium and indigo, for the growth of which the climate is favourable, will doubtless by degrees be produced. At a short distance from Sydney, a large orange grove has been formed, from which upwards of 100,000 dozens of oranges have been sent into the market there in a year; and an immense quantity of fine grapes are sent by a steamer from Hunter's River every day in the season to the Sydney market. The only articles of food in general use not produced in the colony, are tea and sugar; but these are largely imported, and sold at perhaps not the third of their price in this country. In the advertisements in the Sydney newspapers, we see the same kinds of articles announced for sale by tradesmen as are seen everywhere in the wealthiest establishments in Britain.

The production of wool has for some time back been a primary consideration with the settlers, and they have of late begun to pay more attention to the quality than they did formerly, quantity alone having been at one time all they aimed at. From the improvement which has taken place in the breed of sheep, as well as in the mode of preparing the wool for the market, Australian wool has now become an object of much interest to the dealers and woollen manufacturers in England, where it is greatly prized for the peculiar softness of the cloth produced from it, and which, if combined with a little higher degree of fineness—a result that must soon follow the care and attention that is now bestowed on it—would place it on a level with the best growths of other countries, and consequently direct an inexhaustible stream of wealth into the colony; and there are two important considerations at this moment operating to produce this effect. The first of these is the readiness of the market, and the remunerating price which the settler obtains for his wool; the next, the necessity which the distance of the interior settlements from towns imposes on their occupants, of directing their whole attention to the rearing of cattle and sheep in preference to agricultural produce, for which there is neither facility of conveyance nor market.

The state of society in New South Wales has been to a considerable extent affected by the transportation thither of convicts from the United Kingdom, and on that account is less agreeable than that of colonies free from this moral stain. The most unhappy circumstance connected with the state of general society is, that the emancipated convicts and their descendants, however well behaved, are held as a degraded or inferior class by the free settlers; and thus two factions have sprung up in the colony, who virulently persecute each other, and cause dispeace in what would be otherwise an agreeable condition of affairs. As the settlement of convicts as labourers is abandoned as a practice unworthy of an enlightened government, it is to be hoped that the line of distinction between the two classes of inhabitants will gradually disappear. In Sydney, where society both bad and good equally flourishes, there are many hundreds of families of the highest respectability, enjoying all the elegancies of refined life, exchanging its courtesies, and cultivating its amusements and pleasures; splendid equipages are to be seen rolling along its streets; its public dancing and assembly rooms blazing with light, and filled, as our newspapers would say, with 'beauty and fashion;' music parties and theatricals filling up the measure of the happiness of a Sydney life. The population of Sydney in 1841 was about 30,000; and, as a commercial port, the exports exceeded £1,250,000. Next to Sydney, Bathurst has probably the highest pretensions to a superiority in the general character of its society. Melbourne, a few miles from Port Philip, is

also rapidly rising into importance. In 1842 its exports exceeded £140,000 (including about 2,000,000 lbs. wool), and its imports £356,000.

In New South Wales there are several infant schools, and about forty parochial schools; and also two government schools. An orphan hospital has been established at Sydney, capable of rearing and educating 125 children. The male children of this institution are apprenticed out as they come of age, and the females receive a small sum when married. The Australian College was established in 1831, and is now in a flourishing condition. By means of a large and regular import of English literature, the tone of feeling and general intellect of the colony cannot fail to advance in a yearly increasing ratio. With respect to the means adopted for sustaining religious and moral culture, we may mention that there is no lack of churches and chapels where they are required.

SOUTH AUSTRALIA.

South Australia is a large district of country, lying on the southern shore of the Australian continent, between the Swan River settlement or Western Australia on the west, and New South Wales on the east. It is contained within the 26th and 36th degrees of south latitude, and forms a territory of nearly 300,000 square miles, or 192,000,000 acres, being nearly double the dimensions of the British isles. It is penetrated from the sea by Spencer's Gulf and Gulf St Vincent, at the entrance of which lies Kangaroo Island. The country from the eastern side of Gulf St Vincent is very picturesque; being in general well wooded, with considerable spaces of open country. This renders it admirably adapted for sheep-farming, and in many places the land is ready for the plough. About ten or twelve miles inland runs a range of hills, most of which are good soil to the top, and afford abundance of food for cattle. The highest of these is Mount Lofty, about 2400 feet above the level of the sea.

Gulf St Vincent is described as without an island, rock, reef, or sandbank, and almost any part of it is perfectly safe anchorage all the year round. Spencer's Gulf runs nearly 300 miles into the interior, becoming quite narrow and shallow at the top. It abounds with flat fish; but the country around is deficient in fresh water, and but a small portion of the soil is capable of cultivation. The great want of this colony is rivers, by which an intercourse with the interior could be effected. The largest river is the Murray, which is described by Mr James as being, for the last 200 miles of its course, nearly as broad as the Thames at London Bridge. On the banks of this river are several fine alluvial flats, at present covered with reeds, but which are capable of being made to yield abundant crops of grain. These flats are nearly on a level with the river, and could be irrigated at any season. The Murray delivers its waters into Lake Alexandrina, which also receives the waters of the Hindmarsh, and from thence to the sea the river is broad and deep. The next river is the Torrens, on the banks of which stands the town of Adelaide, the capital of the colony. The site of the town is well chosen as to the healthiness of the situation, but labours under the disadvantage of being six miles from the harbour, betwixt which and the town the carriage of goods is very expensive. The harbour is perfectly safe for shipping, but there is a bar at the entrance which prevents very large ships from entering. The great objection to the site of the town is the want of good water, which can only be obtained by boring to the depth of about forty feet, or taking it from the Torrens, which degenerates into almost stagnant pools in the dry season. The town of Adelaide has several good stone and brick houses, and the churches and public offices are described as handsome buildings. The river Glenelg, at the eastern boundary of the colony, is of considerable size during the winter months, but is almost dry in summer. Lake Victoria is a sheet of water about 20 miles long and 7 broad, communicating with the Murray River by a stream called the Rufus. Its banks abound with good pasturage, and the country around is well adapted for agricultural operations.

Much has been written upon the soil of South Australia. On the one hand, it has been lauded as the finest spot in the world, and on the other decried as not worth the trouble of cultivation. From the best authorities we have been able to consult, there appears to be very little of what can be called really barren land. The principal part of it is fit for grazing sheep and cattle, and there are many parts which would yield an abundant return of grain if subjected to the plough. From the want of mountains, the country is very free from rains; even the rivers become comparatively dry during summer. These deficiencies are, in fact, the grand drawbacks upon this otherwise fine colony, which is directed by a governor and council, much in the same way as New South Wales. The usual course of trade is similar to that at Port Philip; the population in 1842 was estimated at 16,000; the imports from Britain at £23,000; and the exports at £24,000. The whole of the purchase-money of public and waste lands being expended on the immigration of free labourers, and no convict labour permitted, South Australia offers certain advantages above New South Wales.

WESTERN AUSTRALIA.

This colony, which is entirely distinct from New South Wales, includes the settlements at Swan River, King George's Sound, and Port Grey. Swan River settlement takes its name, as is obvious, from the river in whose vicinity it is. This river is situated on the south-west coast of Australia, a little way north of the most extreme southern point, on the west side of the island. Its neighbourhood was first proposed as a place of settlement in the year 1828, when Captain Stirling was appointed lieutenant-governor.

The soil appears, and really is, until you have gone about fifteen or twenty miles inland, extremely poor and barren. At this distance from the coast, however, it greatly improves, exhibiting many beautiful and fertile tracts, and bearing some of the most magnificent trees in the world. Here, also, is the same profusion of those gorgeous flowers which form so remarkable a feature of the natural vegetable productions of New South Wales and Van Diemen's Land. Its animal productions are entirely similar to those of the two former colonies, and it is equally free from any that are dangerous to man. The heat, however, would appear to be more oppressive than in either of the places just named. The climate, however, is exceedingly salubrious. Not only have no complaints of any kind whatever, attributable to the country, appeared amongst the colonists, but they are enabled to bear exposures with impunity, which, in most other climates, might be attended with the most serious consequences. The best land, indeed the only land, yet discovered sufficiently near the settlement worth cultivating, is on the banks of the Swan River, and on those of an adjoining river called the Canning; but even there it rarely extends on either side more than two miles from the stream, and not often so far, and all this land has been already located. There is, however, reason to believe that good tracts of country are to be found in the interior. The pressure of emigration, and more leisure on the part of those already there, will no doubt very soon extend the dependencies of the settlement, and lead to some valuable acquisitions of country.

There are already several thriving little towns in the colony, amongst these Freemantle and Perth; the former the port, being built at the mouth of the Swan River, and the latter the capital. The site of Perth is represented as happily chosen. It is situated on a picturesque spot on the north bank of the river, about twelve or fifteen miles above Freemantle. At King George's Sound on the south coast are the lesser townships of Albany and Augusta. Latest statistics give the population at 4500; live-stock, 46,000; official value of imports about £1500; of exports, £24,000; revenue upwards of £10,000.

As to North Australia, whose only settlement is in the neighbourhood of Port Essington, too little has as yet been accomplished to afford ground for any definite opinion. As already remarked, the northern section of Australia is almost strictly tropical, thus presenting products and capabilities totally different from those to which our countrymen have been accustomed either at home or in the other colonies of the mother country.

VAN DIEMEN'S LAND.

Van Diemen's Land, as already stated, is an island lying off the southern extremity of the mainland of Australia, from which it is separated by a channel 120 miles broad, called Bass's Strait. Its situation is between latitude 41° and 44° south, and between longitude 144° 40′ and 148° 20′ east. The length of the island is about 210 miles, and its breadth 150. It was first discovered in the year 1642 by Abel Jansen Tasman, a celebrated Dutch navigator, and was by him called Van Diemen's Land, in honour of Anthony Van Diemen, at that time governor-general of the Dutch possessions in the East Indies. Nothing, however, immediately resulted from this discovery, and for upwards of a hundred years the island was lost sight of. In 1773 it was visited by Captain Furneau, the first English navigator who had ever touched at it; after this it was visited from time to time by several celebrated navigators, and amongst these by Captain Cook, in the year 1777. It was not, however, until 1803 that any settlement was made upon the island; in that year it was formally taken possession of by Lieutenant Bowers, as a receptacle for convicts, with a party from Port Jackson, in New South Wales, where a penal establishment had been already fixed; and to this purpose Van Diemen's Land was exclusively devoted until 1819, when it was thrown open to free settlers.

The continent of Australia and Van Diemen's Land are totally different in character, the one being flat and ill-watered, so as to be suitable chiefly for pasturing, while the other is mountainous, and more resembling Ireland or Scotland. The appearance of Van Diemen's Land from the sea is exceedingly picturesque, presenting an endless succession of lofty mountains, covered to their summits with wood; while tall rocks and precipices, glens and hills, contribute to increase the interest of this romantic island. Nor does a nearer inspection materially alter this general character of the scene. On traversing the island, it is found to present a constant alternation of hill and dale, with occasional flats or plains; but these are comparatively few in number, though some of them are of great extent, consisting in several instances of not less than from 8000 to 10,000 acres, and one in particular is said to be 6 miles in length, and from 2 to 3 in breadth. These plains are in general exceedingly fertile, and being often but thinly interspersed with trees, present a most delightful appearance. There are some of them, again, very poor, presenting a cold thin soil of little value. Van Diemen's Land, though it cannot be called a well-watered country, is yet much superior in this respect to New South Wales.

In another important particular this island is peculiarly fortunate—that is, in the number and capacity of its harbours, no place of similar extent in the world probably being equal to it in this respect. The principal harbours are—the Derwent on its southern side, Port Davey and Macquarrie Harbour on the western, Port Sorrel and Port Dalrymple on the northern, and Oyster Bay and Great Swan Port on the eastern coast. Besides these, there are many other harbours, bays, and creeks, distributed all alongst its shores. The coast is in general high and rocky, particularly on the south, east, and western sides of the island: on the north, however, it presents a line of low alternate sandy beaches, on which the surf rolls with great impetuosity during the prevalence of northerly winds. From the extremely hilly nature of the country, there is but a comparatively small proportion of it adapted for the plough, though presenting abundance of excellent pasturage. The extent of really available land throughout the island has been estimated at one-third of the whole, and this is again divided into four parts, giving one for the plough, and the other three for pasture: thus out of 1000 acres of land, about 100 will be found fit for cultivation, and from 300 to 400 for grazing.

The climate of Van Diemen's Land is exceedingly pleasant and salubrious, and is especially adapted to the constitutions of the natives of Great Britain: the heat in summer is not so intense as that of Australia, not often much surpassing that of London or the southern parts of England; while the mornings and evenings, even at the hottest periods of the year, are always cool and agreeable. The cold in winter, however, though mild when compared to what we experience at that season, is more intense and of longer duration than that of Australia, snow lying frequently on the higher mountains throughout the greater part of the year; but in the valleys and lower districts it seldom remains more than a few hours. There have not yet appeared any diseases which can be said to be peculiar either to the climate or to the island; and, on the whole, the chances of life are estimated to be considerably more in favour of Van Diemen's Land than of Britain, or any other of the most healthy parts of Europe. It is not subject to any extremes of heat or cold: the seasons are regular, mild, and agreeable; the atmosphere constantly pure and elastic; and the sky clear, unclouded, and brilliant.

The island possesses a considerable variety of trees and shrubs. The gum-tree is the largest; and there are numerous others well adapted for ship and house building. The trees are all tall and straight, branching only at the top, and they are nearly all evergreens. All the vegetables and fruits known and cultivated in England and Scotland are raised without difficulty—apples, pears, plums, gooseberries, &c. to which the warmer temperature of Australia is unfavourable, are produced here in great abundance, and of excellent quality. Both the climate and the soil are sufficiently favourable to the production of most descriptions of grain; wheat is found to thrive remarkably well; potatoes are in general a good crop, and of excellent quality. The island is altogether, in short, fit for all the purposes of agriculture aimed at in this country, being neither more nor less favourable to them, but in all respects nearly the same; its climate being ours, only somewhat modified, and its soil in general not materially differing in quality. In July, August, and September, which are the spring months, the farmer sows his grain; in October he prepares the land for Swedish turnips; in November he gets in his potato and turnip crops; December is the height of his hay harvest; at about the middle of January his wheat harvest commences, and continues through February; in March he pays attention to his fallowing and husbandry; in April he gathers his second crop of potatoes; in May he lays down his grasses; and in June he continues his ploughing and harrowing. He has thus a continual round of pleasurable occupation in his fields.

Till the year 1825, Van Diemen's Land was a dependency of the colony of New South Wales, but in that year it received a government of its own. The internal policy of the island is now conducted by a lieutenant-governor, and an executive and legislative council. There are also here a chief-justice, attorney-general, and all the other appendages of a supreme court of judicature, courts of requests, attorneys, barristers, solicitors, proctors, sheriffs, justices of the peace, and the whole paraphernalia of civil and criminal jurisprudence known in this country. There are, besides, as in New South Wales, a number of police magistrates, each having a separate district under his judicial authority; these are, as in the former case, stipendiary. The laws are the same with those in England, in as far as the circumstances of the colony will admit.

Society in Van Diemen's Land, like that of New South Wales, is made up of free settlers who have emigrated from this country, and of convicts. There

are no aborigines now in Van Diemen's Land, these having been lately conveyed to an island in Bass's Strait, and an order has been issued by the home government for their removal to Port Philip district, New South Wales. Regarding the bush-rangers, or runaway convicts, from the effective police force kept up, their depredations are confined to the less-populated districts, and even there they seldom exist long without being captured.

The capital of the colony is Hobart Town, situated on the left bank of the river Derwent, at the head of a beautiful bay, distant about twenty miles from its junction with the sea. The town is pleasantly situated on a gently rising ground, which, gradually retiring, terminates ultimately in hills of considerable height, covered with wood, and presenting a most romantic appearance. These again are overlooked by one of still greater altitude, called Mount Wellington, which rises to the height of 4000 feet above the level of the sea. Hobart Town is thus happily placed between highly-picturesque hills on the one hand, and a beautiful bay or arm of the sea on the other; for, though the Derwent be here called a river, it can be so called only in a very extended sense, the water being still salt, and of considerable width. The town itself covers somewhat more than a square mile of ground; the houses are principally constructed of wood, though many of them are of brick and freestone. The streets are regularly laid out, and those of them that have been completed are macadamised, and present on either side long rows of large and handsome shops. The town derives a peculiar and highly pleasing character too from the circumstance of the houses in general standing apart from each other, each having a small plot of ground, from a quarter to half an acre in extent, attached to it. Its public buildings are numerous, and many of them would be considered handsome even in Britain. The town contains breweries, tanneries, distilleries, flour-mills, two or three banks, hospitals, churches, schools, charitable and stipendiary, inns, taverns, hotels, and grog-shops *ad infinitum*, and everything else which bespeaks a thriving, bustling, industrious, and civilised community.

The town next in importance to the capital is Launceston, situated at the junction of the North and South Esk, at the head of the navigable portion of the river Tamar, which discharges itself into Bass's Strait, about forty-five miles below the town. The town presents a very business-like appearance, with its shipping, wharfs, stores, and public buildings, all calculated to impress the stranger even on a cursory glance with a high idea of its rising importance. From the favourable nature of its situation for commercial purposes, the river being navigable for vessels of 500 tons burthen up to the town, the trade of Launceston is very considerable, and is every day increasing.

The population of the colony in 1842 was estimated at 50,216; but must now be considerably increased, both from the natural progress of population, and the influx of additional immigrants. In 1839, the land-sales amounted to 42,386 acres, at the average of 10s. 2d.; and in 1840 to 88,296 acres, at 11s. 4d., exclusive of town lots and military grants. The principal exports are wheat, wool (in 1841, 8,597,531 lbs.), whale-oil, bark, &c. amounting in 1840 to £867,000; and the imports, comprising all kinds of British manufactures, colonial products, spirits, wines, farming implements, &c. to £988,356. In 1842 the official value of exports to the United Kingdom was £134,150; and that of the imports from the United Kingdom £260,730. At present the annual revenue of the colony is about £100,000, and the expenditure about £135,000. The leading, if not the only misfortune under which Van Diemen's Land labours, is a deficiency of good roads.

NEW ZEALAND.

New Zealand consists mainly of two large islands, called the Middle Island and the North Island, separated by a passage called Cook's Straits, with numerous smaller isles scattered around their shores. They lie in the great southern ocean in an easterly direction from Australia, and at a distance of about 1200 miles from that continent. The New Zealand islands are situated between the 34th and 48th degrees of south latitude, and the 166th and 179th of east longitude. The Middle Island is about 500 miles long, and from 100 to 120 broad. The northern island is the smaller, being about 400 miles long, and from 5 to 30 broad; both being estimated to contain nearly 95,000 square miles, of which two-thirds are fit for cultivation. New Zealand was first discovered in 1642 by Tasman, who, however, did not land, supposing it to form a part of the southern continent. Captain Cook first sailed round the islands, and surveyed their shores with so much accuracy, that his charts are depended upon even to the present day. The distance of New Zealand from Great Britain is rather more than to New South Wales, or about 16,000 miles, but is reached by the same line of voyage round the Cape of Good Hope, the return being by Cape Horn. Vessels reach New Zealand from Sydney in ten or twelve days.

New Zealand is evidently of volcanic origin, there being many extinct and a few active volcanoes in the interior of the islands. Hot springs have also been found, some of which are described as higher than boiling heat, and most of them of a sufficient temperature to cook any kind of native food. A chain of mountains runs through the whole of the southern, and a considerable part of the northern island. Some of these mountains are as high as 14,000 feet above the level of the sea, their tops being covered with perpetual snow, and their sides with forest-trees and luxuriant ferns. Besides this chain of mountains, there are other subordinate ranges, which, for the most part, are covered with vegetation to the summit.

There are numbers of fine streams and rivers scattered throughout the country, which have their origin in these mountains. Several of the rivers are navigable to a small extent, and possess waterfalls which afford the means of establishing mills in most parts of the country. From the shape of the islands, and the mountains which intersect them, the rivers do not run to any great length, from 100 to 200 miles being the average. In 1838, the ship Pelorus entered a river in the southern island falling into Cook's Straits, and sailed up more than 30 miles, and her boats continued the navigation for 20 miles farther. The river Hokianga, in the northern island, situated almost opposite the Bay of Islands, has been navigated 30 miles by vessels of 500 tons burthen. Another river, the Haritoua, which falls into Port Nicholson, is said to be navigable for a considerable distance inland.

The bays and harbours of New Zealand are not surpassed either in number or advantages by those of any country in the world. Beginning with the North Island, we have first the harbour of Wangaroa, the entrance to which is narrow; but inside, the harbour is spacious and well-sheltered. The Bay of Islands is about 25 miles south of Wangaroa, and is the harbour which has been hitherto most frequented by Europeans. The entrance to the bay is 11 miles broad, and perfectly safe, there being no bar. Inside, the bay is studded with a number of rocky islands; the water is deep close to the shore, and the anchorage is excellent. To the south of the Bay of Islands is the Firth of the Thames, which contains several well-protected harbours. The tide flows in this firth to the height of from 8 to 10 feet, and at all times there is plenty of water for ships of almost any tonnage. The Bay of Plenty, on the north-east coast, is formed by the island becoming much broader in a curved direction. This bay is very large, and possesses an excellent harbour called Taurangs, which is much frequented for the shipment of flax, &c. Hawke's Bay is very extensive and deep, the soundings showing from 6 to 27 fathoms water. The most important harbour in the northern island is Port Nicholson, situated in Cook's Straits. The bay is about 12 miles long and 3 broad, perfectly sheltered, and ships may enter or leave

with any wind. The depth of water is from 7 to 11 fathoms, and the whole bay is described as of sufficient capacity to hold a navy. Port Nicholson has the disadvantage of being upon a lee shore, but this objection can only have weight with regard to the navigation of Cook's Straits, not to vessels lying in the port itself. On the west coast of the North Island the harbours have generally a bar at the entrance, which render their navigation more dangerous than those on the east coast. The best harbour on the west coast is that of Hokianga. It receives the river of the same name, and a number of smaller streams; and from all accounts it seems to be a valuable district for settlement. There is a bar at the entrance with 3 fathoms water at low ebb; but the tide rises 12 feet, and inside the harbour deepens to 17 fathoms. To the south of Hokianga occurs the harbour of Kaipara, which is 30 miles long, and receives the waters of three considerable streams.

In the middle island, within Cook's Straits, is the fine harbour of Queen Charlotte's Sound, which is nearly 30 miles long. Ship Cove, within this sound, is a very fine harbour, to which European vessels have long repaired, in consequence of its having been described by Captain Cook. The harbour is perfectly sheltered, and the soundings show 10 fathoms a cable's length from the shore. At the north-western extremity of this island is Cloudy Bay, which runs 15 miles inland, and is about 4 miles broad. Besides these two harbours, there are many others in the island, such as Lookers-on Bay, Port Gore, and Blind Bay; all affording facilities for roadsteads and harbours.

From the position of New Zealand being north and south, it presents great variety of climate considering the size of the country. All accounts agree, however, in describing it as highly salubrious, and very congenial to European constitutions. Spring commences in the middle of August; summer in December; autumn in March; and winter in July. During winter the temperature ranges from 40° to 50° in some parts, and in others the average is higher. In summer the thermometer ranges from 64° to 80°, which is the highest temperature given. Mr Yate, in his Account of New Zealand, speaking of the climate, says—'Those who come here sickly are soon restored to health; the healthy become robust, and the robust fat. North of the Thames snows are unknown; and frosts are off the ground by nine o'clock in the morning. The country, during six months in the year, is subject to heavy gales from the east and north-east, which generally last for three days, and are accompanied with heavy falls of rain. In the winter season the moon rarely either changes or wanes without raising one of these tempestuous gales; and during the whole year the wind is sure to blow, though it may be only for a few hours, from the east, every full and change of the moon. The spring and autumn are delightfully temperate, but subject to showers from the west-south-west. Indeed, however fine the summer may be, we are frequently visited by refreshing rains, which give a peculiar richness to the vegetation and fertility of the land. The prevailing winds are from the south-west and north-west, which, within this range, blow upwards of nine months in the year; more frequently the wind is due west. During five months sea-breezes set in from either coast, and meet each other half way across the island.' The climate of New Zealand has one great advantage over that of Australia, in not being subject to the severe droughts which so often destroy the hopes of the farmer in that country. Its insular position, and the lofty mountains which intersect the country, insure it a constant supply of rain. This circumstance gives it a decided superiority over Australia in an agricultural point of view, rendering it more suitable for the growth of grain; though we are not aware of its being greatly superior to Van Diemen's Land. It does not appear that there are any diseases peculiar to the climate of New Zealand: all accounts agree in describing the inhabitants as a robust and healthy-looking people. Captain Cook says he never saw a single person among them who appeared to have any bodily complaint; and their wounds healed with astonishing rapidity.

The soil of New Zealand appears in almost every part to be excellent, well adapted for cultivating all sorts of grain, and indeed most European vegetables. Around the mountains the soil is volcanic, somewhat resembling that of some parts of Italy. In other parts it appears to be a fine stiff loam and vegetable mould, very productive. Captain Cook, describing the valleys, says—'The soil in these valleys and in the plains, of which there are many that are not overgrown with wood, is in general light but fertile; and in the opinion of Mr Banks and Dr Solander, as well as of every other gentleman on board, every kind of European grain, plant, and fruit, would flourish here in the utmost luxuriance.' The natives cultivate the potato in considerable quantities, which yields them a good crop without much trouble. There is also plenty of fine open land, consisting of alluvial soil deposited from the mountains, which would yield abundant crops of wheat, maize, barley, and other grains. In other parts the soil consists of a deep stiff vegetable mould on a marly subsoil, capable of being slaked with the ashes of the fern. Mr Yate says—'All English grasses flourish well, but the white clover never seeds: and where the fern has been destroyed, a strong native grass, something of the nature of the Canary grass, grows in its place, and effectually prevents the fern from springing up again. Every diversity of European fruit and vegetable flourishes in New Zealand.'

The forest-trees grow to a very great size, many of them being larger than those of America or any country in the world—a sure proof of the fertility of the soil. The largest tree is that called the *kauri*, belonging to the pine tribe. It grows in some cases to the height of eighty or ninety feet without branching, and the branches themselves may be compared to ordinary trees. The trunk is of immense girth, and the wood tough and light, being admirably adapted for ship-building, or almost any other purpose. Another tree, called the *totara*, reaches a height of from fifty to sixty feet, and a circumference of twenty feet. Its wood is very hard, of a red colour, works easily, and from its size and strength may be applied to many useful purposes. The *puriri*, or New Zealand oak, is a tree of great hardness and durability, the wood being of a dark-brown colour, and capable of taking on a beautiful polish. It has been known to remain twenty years under ground, in a wet soil, without rotting. The *farairi*, a tree of the laurel tribe, reaches the great height of from fifty to seventy feet, while its diameter is not more than three feet. It has a very beautiful appearance, and is one of the chief ornaments of the woods, but does not appear to be applied to any useful purpose. Besides these, there are many other trees in New Zealand, especially the pines, which are said to afford very superior timber for ship and house building, and also furniture-making.

The *Phormium tenax*, or New Zealand flax, is another important vegetable production, which is likely to form an article of considerable export. It is said to resemble the garden iris in appearance, having a green thick leaf from six to ten feet long, and growing in the greatest luxuriance throughout the country. The fibres of the leaf of this plant are used for making ropes, and many competent judges state that it is better adapted for this purpose than the European flax. Mr Ward thus sums up his account of the vegetable productions:—'New Zealand is fitted by nature for the production in abundance of those three articles which have always been regarded as the especial signs of the plenty, wealth, and luxury of the country—corn, wine, and oil. Its fertile plains adapt it to the easy cultivation of grain, for the surplus production of which it will possess a ready market, from its vicinity to New South Wales and Van Diemen's Land, where, from the high profits of wool-growing, grain from foreign countries will always find a ready demand. The vine has also been tried, and found to thrive luxuriantly in both islands.'

The very circumstance of New Zealand being suited for the cultivation of grain, renders it unfit for ever becoming an extensive grazing country, at least for the growth of the fine wools of Australia. The following remarks from the Sydney Herald newspaper were written by a person who had visited New Zealand on seven different occasions:—'New Zealand is fitted by nature to become the garden of New South Wales: the fertility of the soil, the excellence of the climate, and, above all, the regularity of the seasons, eminently combine to fit it for an agricultural country. But it is only as an agricultural settlement that New Zealand can flourish; as a pastoral country, it can never compete with New South Wales. The experiment has again and again been tried, and the result has invariably been the same. The climate is too moist for sheep pastures; and the fine wool for which New South Wales is so remarkable, speedily deteriorates in quality on the transportation of the sheep to New Zealand.'

Little definite is known of the mineral productions of New Zealand. Iron and coal are found in abundance, along with bitumen, freestone, marble, sulphur, and copper. A blue pigment made use of by the natives is said to be manganese, and there is a valuable green stone (nephrite) found exclusively in the middle island, which, when polished, excels in beauty many of our finer marbles. There is also abundance of clay fit for brick-making and earthenware.

There are no native quadrupeds in New Zealand, those at present existing having been left by Captain Cook and other Europeans during their visits to the islands. Pigs are numerous, having spread very rapidly throughout the country. They are said to grow to an enormous size, and are highly valued by the natives. Dogs abound, especially about the Bay of Islands; and cats are also plentiful, and are eaten by the natives. The cattle which have been introduced by the missionaries are said to thrive well. Sheep have also been tried, and in some open parts succeeded; but New Zealand, as already stated, is more of an agricultural than a pastoral country. The only reptile yet seen in the islands is a small species of lizard. Birds are very numerous, and are described by all travellers as beautiful songsters. Amongst the feathered tribe may be mentioned ducks, geese, woodcocks, snipes, curlews, and wood-pigeons, as affording food to man. Some of the birds are very remarkable. One, called by the natives the *tui*, has the power of imitating the notes of all the other birds with great exactness. Another, called the *kiwi*, is about the size of a young turkey, and its plumage resembles that of the Australian emu, being long, straight, and coarse. It has neither wings nor tail, but runs with great swiftness along the ground, and can only be caught by dogs. Fish are very abundant all round the coast, and are of most excellent quality. Whales also frequent the coasts of New Zealand for the purpose of calving, and are caught in large numbers. This trade alone is very considerable, and would no doubt be greatly extended were settlements more numerous in the country.

The aboriginal natives of New Zealand were formerly savage and dangerous, but are now partially improved, and harmless in disposition. From all accounts they are susceptible of much greater improvement than the natives of Australia, being ready in apprehension and tractable. They generally dwell in small villages. In their intercourse with Europeans, the New Zealanders have on all occasions manifested a desire to learn, and great aptitude in acquiring civilised customs. Regarding the amount of the native population, it can only be guessed at—probably about 90,000.

The first attempt to colonise New Zealand was made in 1825, by a company under the auspices of the Earl of Durham. Two vessels were despatched to the country by this company, and some land was acquired at Herd's Point on the Hokianga River, but the idea of settling it was soon after abandoned. Meanwhile the missionaries had acquired considerable tracts of land in different parts of the islands, and introduced many farming improvements, along with the religious instruction which they bestowed upon the natives. A company, called the New Zealand Association, was started in 1837; and another, under the name of the New Zealand Colonisation Company, in 1838. These companies may be said to have merged in a New Zealand Company, which was established in May 1839, and which, since that period, has been actively engaged, after many obstructions both from the natives and from the home government, in establishing settlements chiefly in Cook's Straits, as Wellington, Nelson, &c. In 1840 a regular colonial government was established, after the model of the Australian settlements, with Auckland in the northern island as the capital. Various settlements have since been effected in both islands—the most recent being that of Otago, on the eastern coast of the middle island, under the auspices of the New Zealand Company and the Lay Association of the Free Church of Scotland.

In 1842 the colonial population was estimated at 17,000, but must now exceed 23,000. In the same year the value exported to Britain was £10,998, while the imports from Britain amounted to £42,753.

POLYNESIA.

Polynesia—from two Greek words, signifying *many isles*—is the name given to the numerous groups scattered over the central parts of the Pacific Ocean, within 30 degrees on both sides of the equator. The chief clusters north of this line are the *Sandwich* in the east, and the *Ladrones* and *Carolines* in the west; and south of it, the *Marquesas* in the east, the *Society* Islands in the middle, and the *Friendly*, including the *Fejee* and *Navigators'*, in the west. The Sandwich, Society, and Marquesas Islands are of volcanic origin—steep, rugged, and lofty; the active craters of Owhyhee being 13,000, 14,000, and 16,000 feet above the sea level, and the verdant and wooded heights of Tahiti rising to an elevation of 10,000 feet. The other groups, with few exceptions, are entirely of coral formation, elevated but a few feet above the sea, and appearing as long narrow reefs, circular reefs enclosing lagoons, or barrier reefs encircling inner islets, from which they are separated by deep narrow channels.

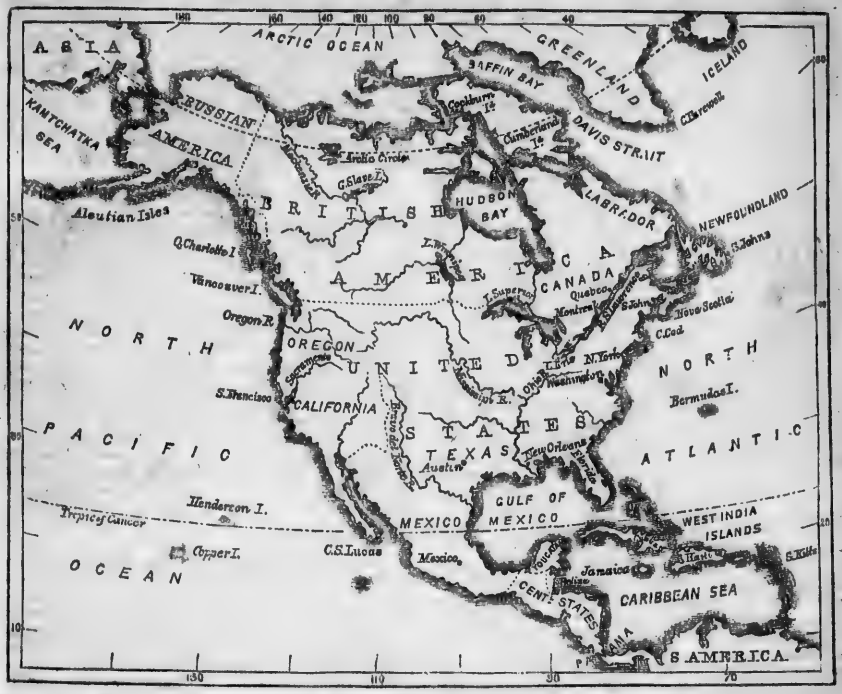
Situated within the tropics, but with an atmosphere tempered by the surrounding ocean, and in the larger islands by the above-mentioned mountains, the climate is delightful, and the soil exceedingly fertile. Among the native productions are the bread-fruit, cocoa, banana, pandanus, plantain, and a variety of tropical fruits; the taro, yam, batata, and other farinaceous roots. Among those successfully introduced are the orange, lemon, sugar-cane, cotton, potato, melon, cucumber, guava, &c. The only quadrupeds found on the islands when first visited by Europeans were hogs, dogs, and rats; but birds were numerous, consisting of poultry, pigeons, turtle-doves, parrots, and other tropical genera. The shores abound with seafowl; and the sea teems with a vast variety of fishes, shellfish, crustacea, turtles, seals, and cetacea. The ox and horse have been brought to some of the larger islands from Europe or from America.

The *natives* seem to belong to the Malay variety of the human race, and have generally been found much more tractable than the barbarous tribes in other parts of the world. When first discovered, they were wholly idolatrous, addicted to cannibalism, infanticide, and similar vices; to the superstition of fetish and taboo; and to the fashion of tatooing. Within the last forty years a large proportion of the inhabitants of the Sandwich, Society, and Friendly Islands have embraced Christianity; and missionaries from the United States of America and Britain have taught them reading, writing, and a number of useful arts.

The only foreign powers having possessions in Polynesia are the Spaniards, who have occupied the Ladrones since the end of the seventeenth century; and the French, who, since 1843, have attempted the occupation of the Marquesas.

NORTH AMERICA.

This is the largest, and in every respect the most important division of the western hemisphere. It is bounded on the east by the Atlantic; on the south by the Gulf of Mexico and the Pacific, save where connected to South America by the narrow Isthmus of Panama; on the west by the Pacific; and on the north generally by the Arctic Ocean. We say generally, for its northern shores are yet imperfectly known, and are at the present moment the object of farther exploration. If we adopt the opinion of Mr Simpson, who traversed the coast from Point Barrow to Point Turn-again, that the waters of Melville Sound are connected with the Gulf of Boothia, then is North America distinct from the arctic regions of Cumberland



Island, New Georgia, and Greenland, which will require to be erected into a new geographical division. Following, however, the usual course of including these regions, and leaving the 'north-west passage' as still problematical, the area of the known continent may be stated at 8,000,000 square miles—the great mass of which lies within the northern temperate zone.

SUPERFICIAL FEATURES—GEOLOGY.

The general physical characteristics of the continent are remarkable for the magnitude of the scale upon which they are presented; the mountains, plains, lakes, and rivers, being superior to those of all other countries. They are thus summarily described in the System of Universal Geography:—1. The narrow region which separates the Gulf of Mexico and the Caribbean Sea from the Pacific, traversed throughout its whole length by mountain-ranges, which leave a narrow tract of low land lying along the sea-coasts, while in certain portions of the interior they form elevated table-lands. Here the mountains (which may be considered as the commencement of the great Rocky chain) attain a culminating point in Guatemala of 14,900, and in the Mexican volcano of Popocatepetl of 17,735 feet; while the table-land of Mexico is from 4000 to 8000 feet in general altitude. 2. The maritime region between the Pacific Ocean on the west and the ridge of mountains which extends from Cape St Lucas in California northwards to Aliaska. This ridge has a general elevation of 8000 or 10,000 feet, but rises in Mount St Elias to 12,630. 3. The elevated region which forms a sort of table-land between the maritime chain before-mentioned on the west and the Rocky Mountains on the east. In its southern portion it presents the arid salt-plains of the Californian desert; between 40° and 45° north it presents a fertile region, with a mild and humid atmosphere; but beyond the last-mentioned parallel it is barren and inhospitable. 4. The great central valley of the Missouri and Mississippi, extending from the Rocky Mountains on the west to the Alleghanies on the east, and from the Gulf of Mexico northwards to the 45th or 50th degree north lat. Between these parallels runs in a waving line the water-shed which divides the basins of the St Lawrence and the Mississippi from those of the streams that flow to Hudson's Bay and the Arctic Ocean. On the east side this region is rich and well-wooded; in the middle it is bare prairie ground, but not unfertile; towards the west it is dry, sandy, and almost a desert. The Rocky Mountains, the greatest and most continuous of the

North American chains, rise from 8000 to 10,000, occasionally to 12,000, and only between lat. 52° and 53° north to 16,000 feet; while the Alleghanies reach their culminating point at 6476 feet, and sink down in their branches to 3000 and 2000 feet. 5. The eastern declivities of the Alleghany Mountains and the maritime region, extending to the shores of the Atlantic. This is a region of natural forests, and of mixed, but rather poor soil. 6. The great northern plain beyond the 50th parallel, four-fifths of which are a bleak and desolate waste, overspread with innumerable lakes, and resembling Siberia (No. 67) in the physical character of its surface and the rigour of its climate.

The geology of the continent, with the exception of the United States, parts of Mexico, Canada, and Nova Scotia, has been but imperfectly examined; but so far as observation has gone, all the usual formations or their equivalents have been detected. Granite, syenite, porphyry, gneiss, and the other primitive rocks, are found in Mexico, in the Rocky Mountains, in the Alleghanies, and on the arctic shores. Overlying these, in Mexico, are transition and other older strata; the Rocky Mountains are flanked by transition and secondary rocks, up to the new red sandstone and saliferous marls; while, flanking the Alleghanies, and taking on in succession, are all the secondary rocks, up to the equivalents of the chalk and green-sand, though no true chalk has yet been detected. Deposits of the tertiary era are abundant in the United States, though not presenting the same mineral aspect as the limestones, clays, and gypsums of the Paris Basin; and in no country in the world are there more extensive displays of post-tertiary and alluvial accumulations—attesting the recent rise of a great portion of the American continent above the waters of the ocean. No active volcano, with the exception of Mount St Elias in the Russian territory, is found north of the Mexican table-land; but evidences of recent extinction are said to be rife in the Rocky Mountains. Fossils, analogous and contemporaneous with those of the old world, have been discovered in the United States—from the curious transition trilobite, down through the coal Flora and the footsteps in the new red sandstone, to the lately-existing mastodon and megatherium. (See GEOLOGY.)

The economic minerals are numerous and valuable—namely, granite and building stones of every kind; marble in the United States; gypsum in the United States and Nova Scotia; limestone almost in every part; salt springs plentifully in the United States, California, and Mexico; coal, both anthracite and bituminous, in inexhaustible fields in the United States and Nova Scotia; petroleum, asphalte; springs of carburetted hydrogen, which serve for light; and other minor minerals. The chief metals are—gold in Mexico, California, and the Carolinas; silver in the Central States; iron in the United States, Canada, Mexico, &c.; copper in the United States, Canada, and the far north; lead abundantly in the Western States and Upper Canada; and tin and mercury in Mexico.

The islands, peninsulas, promontories, and other features which give diversity to the sea-coast, appear to be most numerous in the north—the region of least importance, and with which we are the least acquainted. Passing, therefore, the *islands* in that quarter, the principal on the east are—Newfoundland, a large low island, indifferently wooded, defaced by lakes and marshes, but celebrated for its adjacent cod-fisheries, 350 miles long, with an average breadth of 130; Anticosti, in the Gulf of St Lawrence, sterile, and all but uninhabited; Prince Edward's Island, somewhat hilly, well wooded, and in part cultivated, about 140 miles long, with an average breadth of 34; Cape Breton, a large irregularly-shaped island, with an area of 4000 square miles or thereby, wooded, abounding in excellent coal and valuable fisheries, but with an indifferent moist and foggy climate. On the west or Pacific seaboard are—the now important island of Vancouver, Queen Charlotte's and George III.'s Archipelago, and other sterile rocky islets, of which we know little beyond the position, and that with no great degree of accuracy. The most striking *peninsulas* are—Greenland, Nova Scotia, Florida, Guatemala or the Central States, and Yucatan on the east and south; California and Aliaska on the west. The more prominent *capes* are—Farewell, the southernmost point of Greenland; Capes Chidley and Charles in Labrador; Race in Newfoundland; Sable and Canso in Nova Scotia; Cod and Hatteras in the United States; Sable, the extreme point of Florida; Catoche in Yucatan; St Lucas in California; Cape Prince of Wales, the guardian headland of Behring's Straits; and Icy Cape and Point Barrow in the Arctic Ocean. The only *isthmus* deserving of notice is that of Darien or Panama, which connects North and South America, and which at one place opposite Mandingo Bay is little more than eighteen miles. Various schemes have been recently proposed for the crossing of this narrow neck by canal, with a view to facilitate the communication between the Atlantic and Pacific. From the surveys made, there seems to be no engineering difficulty which may not be surmounted; the only question is, at whose instance, and under what conditions, ought a work of such universal utility be undertaken?

HYDROGRAPHY.

The chief gulfs are—Hudson's Bay on the north, a large inland sea, 800 miles long by 600 broad, interrupted by shoals and islands, frozen for the greater part of the year, and girdled by sterile desert shores; subordinate to the above are James's Bay, 250 miles long by 150 broad, and Chesterfield inlet, penetrating westward for 270 miles; Hudson's Strait, 500 miles in length, and only about 80 miles at its narrowest part; Baffin's Bay and Davis' Strait, celebrated for their whale fisheries; Bellisle Strait, separating Newfoundland from the mainland; the Bay of Fundy, between Nova Scotia and the mainland, 180 miles long, and about 33 in breadth, of dangerous navigation, in consequence of fogs and the velocity of the tide, which sometimes rises as high as 70 feet; Chesapeake Bay, a valuable inlet 180 miles in length, with a breadth varying from 25 to 7; the large land-locked Gulf of Mexico, noted for its low alluvial shores, the high temperature of its waters, and its currents (Gulf Stream), which passes with great velocity through the narrow Strait of Florida; the Caribbean Sea, bounded on the east by the West Indian Islands, through which it communicates with the Atlantic by numerous passages; on the west, the Gulf of California, penetrating inland for 700 miles, with a breadth varying from 40 to 150 miles, celebrated for its pearls; and the Strait of St Juan de Fuca, now forming a neutral boundary between the United States and British America.

The fresh-water lakes of North America are the largest, and in many respects the most valuable, in the world. The whole region between 42° and 67° north is so completely covered with them, that geographers have styled it, by way of eminence, the Region of Lakes. We can only mention a few of the more important:—1. Superior, 420 miles long by 168 broad, covering an area of 35,000 square miles; its surface is 625 feet above that of the ocean, but its depth is upwards of 1000 feet. It has, like all the others, no tidal ebb or flow, is studded by few islands, and, from the unsheltered nature of its shores, affords no great facility for shipping. It discharges its surplus waters by the river St Mary, which, after a course of 30 miles, and a descent of 52 feet, falls into—2. Lake Huron, having a length of 280 miles, and a breadth of 250; area 20,000 square miles, and medium depth 960 feet. It has several large islands, among which are the Manitoulin chain, which almost separates that portion known as Lake Iroquois or Georgia Bay from the main body of the lake. 3. Michigan, on the same level with Huron, with which it is connected by the Mackinaw Strait, little more than four miles across. This sheet is 300 miles long, and about 60 broad; area 16,000 square miles, and depth 900 feet. The shores are low and open, and consequently afford no good natural har-

bourage. 4. Lake Erie, receiving the surplus waters of Huron by the navigable rivers St Clair and Detroit—the former, after a course of 30 miles, expanding into a shallow lake, which again contracts into the latter, also about 30 miles long. Erie is 230 miles long by 40 broad; area 10,000 square miles; its level 560 feet above the sea, and depth 120 feet. The shores of this sheet are low, with a marshy or sandy beach. 5. Ontario, receiving the surplus waters of Erie by the Niagara, which has a descent of 330 feet, 165 of which are by the celebrated Falls of that name, and 51 by the rapids beneath. This lake is 200 miles long, and 40 broad; area 7200 square miles, and mean depth 500 feet. Ontario discharges its waters by the Kataraqui, and the Lake of the Thousand Islands, which afterwards becomes the St Lawrence. The other principal lakes are—Athabasca, Winnepeg, Great Slave Lake, and Great Bear Lake in the Hudson's Bay Territory; and Nicaragua in the Central States.

With respect to rivers, no country is more bountifully supplied than North America; almost every part of its interior being accessible by their means. The Mississippi—reckoning from the source of the Missouri, its true head—has a course of 4300 miles, for 3900 of which it is navigable for boats. It has been calculated that the basin of this river has an area upwards of 1,300,000 square miles, and that the whole amount of boat navigation afforded by the river-system, of which it is the main trunk, is nearly 40,000 miles. Its principal affluents are the Roxo, Arkansas, La Platte, and Yellowstone on the west; and the Tennessee, Ohio, Wabash, and Illinois on the east. The St Lawrence, estimating its course from the head waters of the rivers flowing into Lake Superior, drains a territory of 600,000 square miles, and affords a partially interrupted boat navigation of 4000 miles. The other large rivers are the Mackenzie, flowing into the Arctic Ocean, navigable during the short polar summer, as proved by Dease and Simpson; the Columbia or Oregon, a rapid and obstructed stream; the Bravo or Del Norte, the watering river of Texas; and the Colorado in California. These, as well as many others of the minor rivers, exhibit in their course some of the magnificent and picturesque waterfalls, of which Niagara (165 feet) and Montmorency in Canada (250 feet), the Katerskill (175), Tauqkanic (160), and Great Falls (150) in the United States, may be taken as examples.

CLIMATE—BOTANY—ZOOLOGY.

Of climate, although there must necessarily be a great variety in such a vast extent of continent—stretching from the limits of perpetual verdure to those of perpetual ice—yet it does not agree in particulars from what might be anticipated from an acquaintance with the climatology of different places in the eastern hemisphere. It is usually stated that the temperature in any latitude in America is, upon an average, 10 degrees less than in the same parallel of the old world. The latitudes which are temperate in Europe, for example, are extremely cold in America; and at the same time no part ever suffers under that intense heat which scorches up the torrid zone of Africa and Asia. The coldness of North America is partly attributable to the extent of land uninterrupted by seas, partly to the amount of surface under the frigid zone, and partly to the general elevation of the country. Cold currents of air are constantly passing from the north over the interior, while cold currents of water are as regularly passing from the Arctic Ocean southwards along its shores. The western coast is considerably warmer, however, than the east; and altogether, it is supposed that it will be impossible to carry the arts of civilised life beyond the 60th parallel, on which may be said to be situated the capitals of Norway, Sweden, and Russia in Europe. With this general outline we must here close, referring for particulars to the respective countries hereafter described.

The vegetation of the northern regions greatly resembles that of Lapland in Europe—dwarf willows, larches, poplars, and pines; mosses and lichens; and a scanty herbage, interspersed by a few wild flowers during summer. In the Canadas, and generally in the basin of the St Lawrence, the true forests of American pine and fir prevail, though the trees are inferior in size to those of the United States. Interspersed with these, and becoming more frequent as we proceed southward, are the white cedar, sugar-maple, basswood, hickory, several species of oak, and wild cherry. Here also flourish the Canadian lily, the ginseng, Venus's fly-trap; the cultivated grains and fruits of temperate Europe; with tobacco, hemp, and flax. In the United States—which presents three very different zones of climate—are found a greater variety of species than in almost any other region of the same dimensions. The first zone, north of lat. 44°, exhibits birch, elm, red and white pines, sugar and other maples, a variety of oaks, and the vegetation common to Canada. Between this zone and 35°, oaks, ash, hickory, plane, white cedar, sassafras, witch-hazel, cornel, yellow birch, and red maple become more frequent, as do also fine flowering climbers and aquatics. South of this middle zone, and up to 27°, most of the foregoing are found, with deciduous cypress, Carolina poplar, magnolias, swamp-hickory, lobelias, and a greater variety of climbers and aquatics. South of 27° the vegetation merges into the tropical, or that to be described under the West Indies and South America. As already stated, all the common garden fruits of Europe are reared in the north; pomegranates, melons, figs, grapes, olives, almonds, oranges, &c. in the southern zone. Maize is grown all south of Maine; tobacco as far north as lat. 40°; cotton to 37°; the sugar-cane to 32°; rice in the Carolinas, Louisiana, and Georgia; wheat all over the Union; oats and rye principally in the north; hemp, flax, and hops chiefly in the western and middle districts. (See subsequent sections.)

The Fauna of North America is in many respects peculiar, and has, besides, no analogy to several of the forms common in the old world. Of *mammalia*, we may mention the tailed monkeys of Mexico; the puma, lynx, glutton, wolf, American fox; polar, black, and grisly bears, badger, otter, racoon, opossum, beaver, skunk, ermine; prairie dog; bison, wapeti, prong-horned antelope, moose, red, Virginian, and other deer. Among *birds*—the white-headed and other eagles, various vultures, wild turkey, Canada goose, passenger-pigeon, bell-bird, mocking-bird, humming-birds, &c. Of *reptiles*—the alligator, tortoise, rattlesnake, black-snake, siren, &c. Of *fish*, &c. a vast and useful variety—as cod, sprat, mackerel, salmon; crab; oyster, and other shell-fish. Of useful *insects*, the continent possesses the bee and cochineal insect, and is infested with the mosquito. All the domestic animals of Europe have been introduced with success.

POPULATION—COUNTRIES.

The people who inhabited the continent at the time of its discovery in 1492, belonged exclusively to the American variety of our species, but subdivisible into numerous families and tribes, differing not so much in physical aspect as in manners and customs. Without descending to minutiæ, the aborigines might be classed into the *Toltecans*, or Aztecks, a civilised race who inhabited Mexico, and had made considerable progress in the domestic arts; the *Indian* tribes, who led a savage life, obtaining their subsistence chiefly by hunting and fishing; and the *Esquimaux*, who peopled, as they do now, the shores of the northern seas. Soon after the discovery, several European settlements were formed at various points along the eastern shores of the continent, from the Isthmus of Panama to the Gulf of St Lawrence, and these settlements have been gradually extending, either by purchase from the natives or by conquest, till now the whole of the country may be said to be under European supremacy, before which the Red Man is gradually but surely passing away. The Spaniards colonised Mexico; the French settlements extended along the St Lawrence and Mississippi; and the

English chiefly along the eastern shores; where also settled Scotch, Dutch, Germans, and Irish. Out of all these have been formed the new dominant Anglo-American family, which holds subordinate the few remaining Indian tribes, the vast population of African negroes imported as slaves, and the half-breeds resulting from intermixture with the white and coloured races.

Politically, the original settlements have undergone many mutations: most of them have declared themselves independent, and adopted republican governments; some have changed masters; and only a few remain in unaltered connection with the mother country. The following table exhibits the existing political divisions of the continent:—

Countries.	Sq. Miles.	Population.	Chief Towns.
Russian America,	500,000	50,000	New Archangel.
British America, -	2,900,000	2,000,000	Quebec.
Danish Greenland,	...	7,000	Good Hope.
United States, - -	2,650,000	17,095,000	Washington.
Mexico, - - - -	900,000	8,000,000	Mexico.
Central States, - -	186,000	2,000,000	S. Salvador.
Yucatan, - - -	76,000	570,000	Merida.

Such are the existing divisions or governments, the physical, political, social, and industrial features of which we shall now endeavour to describe as fully as our narrow limits will allow:—

RUSSIAN AMERICA.

This territory comprehends the north-western corner of the continent, together with the adjacent islands, forming in all an area about 500,000 square miles. It is in the immediate possession of the Russian-American Company, whose chief object is the collection of peltry for the Chinese market; but their dominion over such a vast and inhospitable region is merely nominal. The natives who live along the coasts, and barter furs and skins with the Company's agents, acknowledge in some degree the sovereignty of the empire; but those of the interior are utterly ignorant of, and uncontrolled by, any idea of extraneous authority. They are comparatively few in number, are thoroughly savage, and subsist wholly by fishing and hunting. As a race, they are rather under the middle size, are of a dark-brown complexion, and seem, especially towards the coast and on the islands, to be intermediate between the Mongolians and true Americans of the interior. The white population form a mere handful of agents and their servants—inhabiting the forts or settlements, which are few and widely separated. The chief of these is New Archangel—the capital of the country—containing a mixed population of 1000. It is situated on the west coast of Sitka Island, and contains the boards and warehouses of the Company. As a region, Russian America is sterile, dreary, and unimprovable; even the trade which it at one time possessed is rapidly on the decline, in consequence of the unsparing massacre of the animals—sea-otters, seals, sea-lions, foxes, wolverines, &c.—which yielded the furs and peltry.

BRITISH AMERICA.

British America embraces a territory nearly as large as Europe, and comprises—1. The bleak region of New Britain, inhabited by the Esquimaux and other savages, and by the forts or fur depôts of the Hudson's Bay Company; 2. Upper and Lower Canada, united into one colonial province in 1841—the former settled chiefly by emigrants from Britain and the United States, and the latter originally settled by the French, but conquered in 1759; 3. New Brunswick, noted for its timber and fisheries, ceded by the French at the peace of 1763; 4. Nova Scotia, first settled by the French, and along with New Brunswick called Acadia, but subsequently fell under the English, and after several times changing masters, was finally acquired by Britain in 1763—possesses coal, gypsum, wood, and abundant fisheries; 5. Prince Edward's Island, also taken from the French in 1758, and annexed to Nova Scotia, but since 1763 has formed a separate colony; 6. Newfoundland, noted for its productive cod-fisheries, discovered by the English in 1497, but not successfully established as a colony till 1623; and, 7. To these may be added the settlement of Belize on the Bay of Honduras, transferred from Spain to England by treaty in 1670—valuable for its mahogany and logwood. Of these territories and colonies, as more especially interesting to British readers, we may offer a few details:—

New Britain,

or, as it is commonly termed, the Hudson's Bay Territory, comprehends the whole lands in North America granted by the British government to the Hudson's Bay Company. The boundaries of these lands were never very satisfactorily defined. Originally limited to the districts drained by the rivers falling into Hudson's Bay, they have, since the union of the Hudson's Bay and North-West Companies in 1821, been regarded as comprehending the whole of British America, with the exception of the settled provinces or crown colonies. The territory, as might be expected from its vast extent, presents considerable variety in physical character, though on the whole cold, dreary, and uninviting. In the north, vegetation is scanty and stunted; as we travel southwards, the pine forests begin to appear, till in the southern regions on both sides they become dense, with open spaces of lake, morass, and prairie ground. With the exception of Red River district, near Lake Winnepeg, which was sold by the Company to Lord Selkirk, and is assuming the form of a European settlement, the whole territory may be regarded as a vast hunting-ground, occupied by buffaloes, musk-oxen, deer, bears, wolves, foxes, beavers, lemmings, ermines, and other fur-bearing animals—the skins of which constitute the principal value of the territory. No doubt copper, iron, lead, plumbago, coal, and salt have been discovered in several places; but these, without the facility of being mined and transported, remain unemployed and worthless. The population, amounting to about 140,000, consists chiefly of various Indian tribes, who roam over the interior; of Esquimaux, inhabiting the northern and eastern coasts; and of the officers and servants of the Company (with a sprinkling of half-castes), who inhabit the forts or factories.

With respect to the Hudson's Bay Company, which was chartered in 1670, and possesses the monopoly of the fur trade in these regions, 'the supreme direction (we quote Waterston's 'Cyclopædia of Commerce') is vested in a board consisting of a governor, deputy-governor, and seven directors, who hold their sittings in London. A resident governor appointed by them has the superintendence of all the settlements, and is assisted by local councils, composed of the principal officers in each district, who meet him at central points during his annual tours of inspection. The acting officers consist of chief factors, each of whom has charge of several posts, of principal and secondary traders, and of clerks. The higher offices are filled up, according to merit, from the inferior ones; so that it is perfectly open for a clerk to rise to the rank of chief factor. The Company have at present in their employ about 1000 Europeans, and their descendants by Indian wives. They have four or five principal stations: York Fort, the most important, commands all the vast region extending west and north of Hudson's Bay; Moose Fort, at the south extremity of Hudson's Bay, presides over all the country between that gulf and the Canadian lakes; Ungava Bay, at the exterior entrance of Hudson's Bay, contains a small station for collecting the produce of the adjacent coasts of Salvador, consisting chiefly of oil from the seal and porpoise; Montreal is the centre of the transactions carried on in the Canadas.' The Company has also several stations west of the Rocky Mountains, the chief of which was Fort Vancouver, on the Columbia River; but since the adjustment of the Oregon boundaries with the United States, the chief factory has been removed to Vancouver

Island, which, during the present year (1849), has been given by the crown to the Company as a field for colonisation. Possessing wood, coal, iron, and, it is said, other metals; having a favourable climate; and affording facilities for shipping, Vancouver Island is likely to assume considerable importance; and this all the more rapidly from its being the nearest British territory to the new El Dorado of California. The annual value of the imports from Britain to the Hudson's Bay Territory is estimated at £55,000; while that of the peltry and other articles exported varies, according to circumstances, from £40,000 to £70,000.

Canada.

Canada is bounded on the east by the Gulf of St Lawrence, on the north and west by the territories of the Hudson's Bay Company, and on the south by the United States and the British province of New Brunswick. Until a recent period, Canada was divided into two provinces, the Upper and Lower, each of which had its own local government; but by an act of the imperial parliament in 1841, the two provinces are united under one general Legislative Council and House of Assembly, two bodies respectively resembling the Houses of Peers and Commons in the mother country, and whose measures require the consent of the governor, as the acts of the home parliament require that of the sovereign. The affairs of this, as of all other colonies, are subject to an ultimate control, vested immediately in a colonial minister, but finally in the British legislature. In Lower or Eastern Canada, the greater part of the population is of French descent (this having originally been a French colony): the laws resemble those of France, and the French language is generally spoken. Upper or Western Canada lies to the west and south-west of the lower province. Its inhabitants are of British descent, and a very large proportion of them are from Scotland, both Lowlands and Highlands. The English law and church are here established; but there is the most perfect liberty of conscience, and as great a security of life and property as in Britain. The aggregate area of the province has been estimated at 355,000 square miles, and the population at 1,225,000.

Western Canada, which is the finer and more eligible section, is divided into districts, counties, ridings, townships, special tracts, and allotments, together with blocks of land reserved for the clergy and the crown, and lands appropriated to the Indians. A district contains one, two, or three counties, and each county contains from four to thirty townships. The line of division betwixt Western and Eastern Canada is in one part the Ottawa or Grand River. Nearly all the other lines of division in the provinces are straight, without regard to physical distinction, such as hills and rivers; and this peculiarity is common over the whole of North America. The entire area of Upper Canada has been estimated at 64,000,000 acres. Of this extent of territory, the portion laid out in townships, and open for settlement, amounts to nearly 17,000,000 acres, the size of each township averaging 61,600 acres. Deducting the quantities granted to different classes of settlers, and otherwise disposed of by the crown, there yet remains within the townships, at the disposal of government, about 3,000,000 acres. This tract of country, chiefly bordering the north shore of the river St Lawrence, and of the lakes Ontario, Erie, and St Clair, and of the rivers or straits communicating between these lakes up to Lake Huron, a distance in all little short of 700 miles, and stretching northward from the water to a depth varying from 50 to 80 miles, is composed of a soil which, for productive richness, variety, and applicability to the highest purposes of agriculture, may challenge competition with the choicest tracts of land in the new world.

Western Canada is chiefly a flat country, and is for the greater part covered with timber, but possesses a number of chains or ridges of high lands, running in different directions, and separating the sources and channels of innumerable rivers and brooks. The grand feature of the country is its water-courses. By looking at the map, it will be perceived that there is a series of large lakes, communicating with each other; these are unequalled by any inland sheets of water in the world, and are entitled to the appellation of fresh-water seas. The series, so far as Canada is concerned (see page 290), consists of Lakes Superior, Huron, Erie, and Ontario. The waters of Lake Erie, on issuing from its lower extremity, form a river of nearly half a mile broad, which in its course is precipitated over a precipice to a depth of 165 feet, thus making the famed cataract or Falls of Niagara. The river is, at the distance of a few miles below, received by Lake Ontario, whence issues the river St Lawrence, one of the largest streams in the world, and which, after a course of 2000 miles, falls into the Atlantic. This majestic river is 90 miles wide at its mouth, and is navigable for ships of the line for 400 miles from the ocean. In its upper parts, its navigation is impeded by *rapids*, or the rushing of the stream down an inclined plane; but some of these impediments are obviated by means of canals recently cut; wherefore there is now a continued water communication for vessels from the Atlantic into the interior or innermost lakes. The Welland Canal, a magnificent undertaking, connects Lakes Erie and Ontario, and affords a passage for vessels of large size. Lake Erie is also connected by a canal with the Hudson, a river of the United States, which also falls into the Atlantic. The Ottawa, or Grand River, is next to the St Lawrence in point of size, and is tributary to it. It falls into the north side of the St Lawrence at Montreal. The Welland, or Chippewa, is also a remarkably fine river, wholly unobstructed by falls. The St Lawrence has a tendency northward in its course, and, therefore, the farther we ascend its waters the milder does the climate of the country become.

The *climate* of Canada presents very opposite extremes of heat and cold, and the transition from the one to the other is much more sudden than in Great Britain. Notwithstanding this, however, it is healthy; all accounts which we have seen, both those of travellers and the letters of private individuals, agreeing in this respect. The spring in Canada generally commences about the end of April, and the fields are well covered with vegetation by the beginning of May. The thermometer ranges during summer from about 80° to 84°; in some instances it has reached 102°; but such extreme heat is very rarely felt. Spring, summer, and autumn extend from the end of April to October. Winter commences in November, when thick fogs and snow-storms are frequent. By the middle of December the ground is generally covered with snow, and the frost, especially in Lower Canada, becomes sometimes very intense. The depth of the snow in Upper Canada varies according to seasons, from a few inches to several feet; the average depth, taking one season with another, has been estimated to be between eighteen inches and two feet. The winter in the Upper or western part of the province is much milder than in the Lower or eastern part, and new settlers generally are pleasantly disappointed in not experiencing the rigours which, from exaggerated rumours at home, they had expected to find. January has generally a week or more of open, and sometimes mild weather; and it not unfrequently happens that it is only in February that the weather may be said to be very severe and the frost intense.

In Lower Canada, where winter is most severe, the thermometer ranges from 25° above to 25° below zero. The sky of a Canadian winter is generally almost cloudless, the air bracing, and, from the absence of wind, in spite of the low temperature, the cold is not felt to be disagreeable. From Quebec to Montreal and upwards, the St Lawrence and other rivers, and also the lakes, cease to be navigable; but the firm icy surface serves as a road for the sleighs and carrioles; and although the entire face of nature is now changed —the varied and pleasing tints of autumn in the forest, and the busy and enlivening signs of commerce upon the lakes and rivers, having given place to one

dead and drear-like scene, seemingly destitute of variety—yet the snows and frosts of Canada are hailed as ushering in a season which brings with it no small amount of social enjoyment. Winter in Canada is indeed the season of joy and pleasure: all classes and ranks indulge in a general carnival, as some amends for the more enervating toil undergone during the summer months. The double-seated sleigh, with its mettle pair of horses, or single-horse *cutter* of the Upper Canadian, or the carriole of the humble *habitan*, or proud *seigneur* of Lower Canada, is got ready all over the country. Riding abroad on business or pleasure commences; visiting is in active play between friends, and relatives; regular city and town balls, and irregular pic-nic country parties, are quite the rage.

Whi' the external weather is guarded against by warm clothing when out of doors, the habitations of the Canadians are kept comfortably warm, the apartments being heated with stoves, which keep the temperature at a higher and more uniform rate than can be effected by English fireplaces.

The various writers on Canada each recommend particular districts for the settlement of the emigrant; but it is hardly to be expected that persons in this country can make a perfectly judicious choice, a personal inspection of the lands, or at least information near the spot, being in almost every case requisite. The most elaborate details are given by Bouchette, in his large work on British America, regarding the different parts of the province; and as what he mentions may be of use in furnishing emigrants with an idea of the nature of the lands, we take the liberty of transcribing a few of his observations:—

'The *Eastern Section* includes Ottawa, Johnstoun, Midland, and Bathurst districts. Situated between two broad and navigable rivers, the Ottawa and the St Lawrence, and centrally traversed in a diagonal course by an extensive and splendid sloop canal, connecting the navigation with the waters of Ontario, this section of country evidently enjoys important geographical and local advantages. Its surface presents, almost unexceptionably, a table-level of moderate elevation, with a very gentle and scarcely perceptible depression, as it approaches the margin of the magnificent streams by which it is bounded to the northward and south-east. The soil, though sometimes too moist and marshy, is extremely rich and fertile, and chiefly consists of a brown clay and yellow loam. This section is intersected by numerous rivers, remarkable for the multitude of their branches and minor ramifications. There are also a number of good public roads, both along the St Lawrence and Ottawa, and into the interior. Great industry and attention to improvement are displayed upon most of the lands throughout this tract. The town of Kingston, the largest and most populous of the upper province, is very advantageously seated on the north side of the St Lawrence, or rather at the eastern extremity of Lake Ontario. The thriving village of Perth is situated in the township of Drummond, on a branch of the Rideau, and occupies a central position between the Grand River and the St Lawrence, communicating by tolerably good roads with Kingston to the south and Bytown to the northward, at the opposite extremities of the Rideau Canal. The first establishment, fostered by government, was made in 1815, by British emigrants, chiefly from Scotland, many of whom are now at the head of excellent farms, possess comfortable habitations, and reap the fruits of their perseverance and industry. Ascending along the shores of Lake Chaudiere, the objects of note first presenting themselves are the rising colonies in front of the townships of March and Tarbolton; they are chiefly composed of families possessed in general of adequate means to avail themselves of the advantages that are incident to a newly-opened country.

The *Central Section* of the province embraces the districts of Home and Newcastle, which occupy a grant of about 120 miles upon Lake Ontario, extending from the head of the Bay of Quinté westward to the line between Toronto and Trafalgar. Although less populous than the tract of country composing the first part of the division which we have adopted, this portion of the province does not yield to it in fertility, and is equally well watered by numerous lakes, broad and beautiful rivers, and innumerable streams and brooks. The rivers in general abound with excellent fish, and especially salmon, great quantities of which are annually speared in the river Credit, for the supply of the western country. In front of Newcastle district, on the borders of Lake Ontario, the soil consists of a rich black earth; but in the district of Home, the shores of the lake are of an inferior quality. The lands upon Yonge Street [roads are frequently called streets in Canada], which connects Toronto with Lake Simcoe, are exceedingly fertile, but so destitute of stones (for building and other purposes) as to create some inconvenience to the settlers. A sandy plain, of some extent, exists some distance north of Ontario, towards Rice Lake; but saving this, and probably one or two more comparatively insignificant exceptions, the soil of this tract of country is extremely fertile, well adapted for agriculture, and yields luxuriant crops of wheat, rye, maize or Indian corn, peas, barley, oats, buckwheat, &c. The fronts of all the townships from Kingston to Toronto are, with few exceptions, well settled; roads lead through them, from which, in many places, others branch off to the interior. At intervals, rather distant indeed from each other, there are a few small villages. On the lands that are occupied, great progress has been made in agriculture: the houses, generally speaking, are strong and well-built: and the inhabitants appear to be possessed of all the necessaries, as well as most of the comforts, that a life of industry usually bestows.' In this division is the town of Toronto, which occupies a good situation on a fine bay of Lake Ontario; population in 1840, 12,000.

The *Western Section* comprises Gore, Niagara, London, and Western Districts. The surface is uniformly level, or but slightly undulating, if we except a very few solitary eminences, and those parts of the districts of Gore and Niagara traversed by the ridge of elevated land. The variety of soils, and the diversity of their combinations, observable in these four districts, are by no means so great as might be expected in so extended a region. The whole tract is alluvial in its formation, and chiefly consists of a stratum of black, and sometimes yellow loam, above which is deposited, when in a state of nature, a rich and deep vegetable mould, the substratum beneath the bed of loam being generally a tenacious gray or blue clay, which in some parts appears at the surface, and, intermixed with sand, constitutes the super-soil. There are numerous and extensive quarries of limestone to be found in these districts, that supply the farmers with excellent materials for building. Freestone is also found, but in small quantities, and generally along the shores of the lakes. The Thames River, in this section, rises far in the interior; and after pursuing a serpentine course of about 150 miles, in a direction nearly south-west, discharges itself into Lake St Clair.

The *chief towns* in Canada are Quebec, Montreal, Three Rivers, Prescot, Kingston, and Toronto, formerly called York. The city of Quebec is the capital of Lower Canada, and stands on the extremity of a precipitous cape, on the north bank of the St Lawrence, opposite the island of Orleans. Population in 1840 about 26,000. The appearance of the town, on coming into view, is particularly striking. The city is divided into an upper and lower town; the former being of ancient date, and adopted as the seat of commerce, and the latter being the residence of the higher and more affluent classes. There are a number of fine public edifices; among the rest, the Castle of St Louis, a prominent object on the summit of the rock; the Roman Catholic and Protestant Cathedrals, the barracks, hospitals, the Quebec Bank, and a handsome monument to Wolfe and Montcalm. The institutions are in many instances of French character, and

the language of the inhabitants is French and English. As a port, Quebec has great capabilities—the basin being sufficient to contain 100 sail of the line. The amount of shipping annually entered is little short of 400,000 tons. Montreal is a city of an entirely different appearance. It is agreeably situated on a beautiful island of the same name in the St Lawrence, which measures 32 miles long by 10½ broad, and lies at the confluence of the Ottawa River and the St Lawrence. The island of Montreal is nearly level, and is scarcely excelled in fertility. The city stands on the south side of the island, and is reckoned the first in the province, in respect of situation, local advantages, and mildness of climate. The houses are well built, and the streets commodious. There are also some handsome public buildings. The literary and scholastic institutions in Montreal are numerous, and are of great benefit to the province. There are no wharfs, and the ships and steamboats sail close to the bank of the river, where there is water for vessels of 600 tons. The annual tonnage entered at the port is about 24,000; the population of the city in 1840 was 35,000.

The principal branches of industry in Canada are—agriculture, the main product of which is wheat, amounting to upwards of 11,000,000 bushels per annum; the felling and export of timber, yielding about £705,000 yearly; the preparation of pot and pearl ashes, in clearing the land of timber, there being about 36,000 barrels annually exported; and the subordinate branches of fisheries, oil, and fur trade. There are some small manufactories of different articles at Montreal and Quebec; flannel, coarse cloth, and linen are now made to some extent in various districts; iron-founding is conducted on a considerable scale in Three Rivers, Quebec, and Montreal; and soap, candles, and the like, in several of the larger towns. The chief articles of export are timber, ashes, wheat, and other raw produce; the imports are coal, metals, cordage, East India produce, and various kinds of British manufactures from Europe; sugar, molasses, rum, and hardwoods from the West Indies; and beef, pork, biscuit, rice, and tobacco from the United States. The total value of the imports average about £2,000,000, and and that of the exports £1,080,000.

Nova Scotia.

Nova Scotia is a peninsula connected with the mainland by a narrow isthmus. It measures about 300 miles in length, but is of unequal breadth; altogether, it contains 15,617 square miles, or nearly 10,000,000 acres, with a population of about 156,000. There are numerous lakes, but the greater number occur near the southern and south-western coasts, covering about one-tenth of the entire superficies. There is no part of the land thirty miles distant from navigable water, and in all parts there are fine streams and rivers. The southern margin of Nova Scotia is broken and rugged, with very prominent features, deep inlets, and craggy islands. The features of the northern coast are soft, and free from rocks. It is bounded on the north by part of the Gulf of St Lawrence, which separates it from Prince Edward's Island; on the north-east by the Gut of Canso, which separates it from the island of Cape Breton; on the west by the Bay of Fundy, which separates it from New Brunswick; and on the south and south-east by the Atlantic Ocean.

The soil of a country of such extent and such varied features as Nova Scotia must necessarily be various. If an imaginary line be drawn, dividing the province in the exact centre, from east to west, the north-western half will be found to contain by far the greatest portion of good land. On the side towards the Bay of Fundy, the soil is very rich, and free from stones, and contains many thousand acres of diked marsh land. This is alluvial land, and is made by the deposit of the tides—a sediment composed of the finer particles of soil, brought away by the rivers and torrents in their course to the Bay of Fundy, of putrescent matter, salt, &c. This land, called marsh, after it has attained a suitable height, is diked, and the waters of the sea excluded. Nothing can exceed its fertility. In many places, particularly about Windsor and Truro, it yields three tons of hay per acre, and has continued to do so without manure for fifty years past. There is a difference in its quality. Where the water which overflows it is not much enriched by a long course through the country, it is thin, and of an inferior quality. The quantity of land enclosed in this manner is very great. At the head of the Bay of Fundy, there are 70,000 acres in one connected body. There is one marsh in Cumberland containing nearly as much land as Romney Marsh in Kent, and of a quality vastly superior. This land is found in great quantities in Cumberland, Macan, Napan, Londonderry, Truro, Onslow, Shubenacadie, Noel, Kennetcook, Newport, Windsor, Falmouth, Horton, Cornwallis, Granville, Annapolis, &c. The next best quality of land is called by a term peculiar to America, *intervale*, an alluvial soil made by the overflowing of large fresh-water brooks and rivers in the spring and autumn. The quantity of intervale is incalculable. It is to be met with in every part of the province, and is frequently found covered with a long natural grass, several feet in length, and is sometimes called 'wild meadow.' The quality varies according to the size of the brook or river by which it is made, but in general it is very fertile and rich. The upland varies so much in character that it is difficult to give a general description of it.

The mineral products of this part of America are valuable; but none is so much worthy of consideration as coal, which is worked at Pictou, at Sidney in Cape Breton, and also in Cumberland county; and there can be no doubt that the possession of this mineral will constitute one of the chief advantages of these provinces over every other. In 1847, about 120,000 tons were shipped from Pictou alone. Limestone, freestone, and slate abound, of the best qualities, and there is plenty of fine clay for bricks. Iron ore has also been discovered in several places; gypsum occurs in enormous beds, and forms a valuable article of export to the United States; and 'Nova Scotia blue grits,' or grindstones, are celebrated all over America.

The climate of Nova Scotia, like that of the adjoining districts, is salubrious and pleasant, but is in a peculiar degree exposed to the extreme of summer heat and winter cold. The ground is generally covered with snow from the 25th of December till the 5th of March, in which respect it nearly resembles Upper Canada; and during this period the farmers draw upon sledges their wood and poles from the forest, and carry their produce to market. It is difficult to say when spring commences, as it is rather late and irregular in its approaches. When vegetation does begin, it is very rapid, and two or three days make a perceptible change in the amount of the foliage. The summer may be said to be short and powerful, and during the time it lasts it exerts a much greater influence on vegetation than is observable in Britain. During this period, the inhabitants go very lightly dressed. Altogether, the climate of Nova Scotia is as good as that of Scotland, if not superior; nor are there any of those local or epidemical disorders with which other countries are frequently afflicted. Although the winters are intensely cold, they are not so disagreeable as the raw changeable winters of this country, nor nearly so fatal to human life. Besides, if the settlers work during three-quarters of a year, they have ample provision for the remaining quarter, and are enabled to look forward to winter as their season of holiday enjoyment and relaxation.

Few parts of the world are so well watered as Nova Scotia. The rivers, brooks, springs, and streams of different kinds, are very numerous. Some of the lakes are extremely beautiful, containing in general one or more small islands, which are covered with a luxuriant growth of wood, and vary in every imaginable shape. The land in the neighbourhood of them is often undulated in the most romantic manner. These lakes will in time be of great service to the province; in several

instances they nearly intersect the peninsula, offering scope for inland navigation.

The fruits produced in the country are numerous. Besides a great variety of wild fruits, gooseberries, strawberries, cherries, and raspberries, there are pears of various kinds, all the varieties of English plums, apples of a very superior quality, and some finer fruits. The other vegetable products are cucumbers, potatoes, artichokes, cauliflowers, cabbages, beans, and peas. Hops are an invariable and sure crop, and may be raised in great abundance. Pumpkins and Indian corn are cultivated to a great extent. Carrots, onions, parsnips, beet, celery, and most other kitchen herbs, are produced with ease. The grains cultivated are summer and winter wheat, rye, buckwheat, barley, and oats. The natural forests are elm, cherry, white, black, yellow, and gray birch, red oak, beech, white and yellow pine, white, red, and black spruce, maples, &c.

The province has no animals of a dangerous nature. There are the elk or moose, the reindeer, lynx, otter, racoon, fox, marten, beaver, porcupine, squirrel, &c. Among the feathered tribe there are a number of birds of the same kind as in Britain, including those called game in this country, all of which may be shot and used as food without any restriction. The only troublesome insects are the mosquitoes and black flies during hot weather. The rivers abound with the finest fish, among which are salmon and trout; and the shores yield large supplies of white and shell-fish.

Nova Scotia is divided into seventeen counties, three of which are in Cape Breton. The chief towns are Halifax, Yarmouth, Pictou, Lunenburgh, Liverpool, Bridgeton, Windsor, &c. in Nova Scotia Proper; and Sydney, North Sydney, and Arichat in Cape Breton. The capital, Halifax, is pleasantly situated on the slope of a rising ground, facing a fine spacious bay or natural harbour in front, on the eastern or more accessible side of the peninsula. It contains about 25,000 inhabitants, and is a central point for the foreign commerce and fishing trade of the colony. Although possessing considerable wealth and trade, and the seat of an intelligent population, it is behind English towns of the same size and inferior capabilities. Here, as elsewhere in the colonies, a dependence on the arrangements of the home government deadens public spirit, and retards that natural tendency to advance which is observable in the towns of the United States.

Cape Breton is a romantic and mountainous island, lying close to Nova Scotia on the east, and forming three of its districts or counties. The island measures upwards of 100 miles in length, by about 60 in breadth, including the numerous bays which indent the land. The natural productions of this island resemble those of Nova Scotia, though wheat is less generally grown, and oats and potatoes are raised to a considerable extent. There are large tracts of good land in the lower parts, and the expense of clearing it of timber is estimated at £3 an acre. The mineral resources of the island are valuable.

The most important branches of industry in Nova Scotia are the timber trade, mining, cod-fishery, shipbuilding, and agriculture. The annual exports amount to about £550,000; the imports to £800,000. The province possesses upwards of 120,000 tons of shipping; and upwards of 350,000 tons are annually entered at the various ports.

New Brunswick.

The province of New Brunswick, lying on the mainland of North America, contiguous to the United States and Lower Canada, consists of an extensive tract, comprising nearly 26,000 square miles, the greater part of which is still covered with dense forests. The land, however, is generally fertile, and excellently adapted for the settlement of emigrants. Besides being recommended by the fertility of its soil, it possesses innumerable rivers and streams in all directions, suitable for purposes of trade or manufacture. The climate is salubrious; the natural products numerous and valuable; wild animals are plentiful; and the rivers and lakes abound in fish; while along the coasts cod, haddocks, salmon, and other fish, are yielded in plenty to the enterprising fisherman. The resources of the province are thus inexhaustible, and, according to Macgregor, suitable to the maintenance of at least 3,000,000 of inhabitants. As yet, New Brunswick has a population only of 206,000, and the principal settlements are along the river St John and its lakes. On the northern side of the entrance to this large river from the Bay of Fundy stands the town of St John, the largest in the province, and the seat of an extensive trade. Frederickton, which claims to be the metropolis of the colony, is situated ninety miles above St John's on the same river; population between 3000 and 4000.

The province of New Brunswick presents an extensive line of coast to the Gulf of St Lawrence on the east, while on the north it has part of Lower Canada, which separates it from the river St Lawrence upwards. Its latent capabilities for carrying on trade with the interior are thus very considerable. Miramichi is the chief river after the St John. It falls into the Gulf of St Lawrence, and is navigable for large vessels for about forty miles. Along its banks, here and there, are seen the huts and houses of settlers, who have not made great advances in cultivation. The cutting and export of timber form the main trade of the district. About twenty miles up, on the south bank, is seen the village of Chatham, where many of the ships load, and where several of the merchants are settled, who have erected stores and wharfs. Four miles farther up stands the village of Newcastle. The total value of the exports from the province is estimated at £400,000; and that of the imports at £600,000.

Prince Edward's Island.

This rich and productive island is situated in the Gulf of St Lawrence, betwixt Cape Breton on the east, and New Brunswick on the west, and is separated from Nova Scotia on the south, by a strait of about 9 miles in breadth. It measures 140 miles in length, and is 34 at its greatest breadth. The general appearance of this island from the sea is level, but on landing, the scenery is varied with gentle undulations. It abounds with streams and lakes, and in many places it is indented with bays, no part being more than eight miles from the sea. The soil is in general fertile, yielding good crops of wheat and other grains; and parsnips, turnips, carrots, potatoes, and almost all the common culinary vegetables, succeed well. This island has been recommended to such emigrants as possess a knowledge of agriculture with that of the curing of fish. The climate of Prince Edward's Island is in some respects similar to that of the neighbouring countries. The winter is said to be shorter than in Lower Canada, and the atmosphere is noted for being free of fogs. Agricultural operations commence about the beginning of May, and the harvest is generally over by the end of October. The chief disadvantage this colony labours under, and which is equally applicable to the others near it, is the great length of the winter, which obliges the farmer to lay up a very large stock of hay for supporting his live-stock. The sudden manner, also, in which spring comes on abridges the period for sowing and planting, thus leaving the agriculturist comparatively idle at one season, and obliging him to work severely at another.

The inhabitants are chiefly from Scotland and Ireland, with a few Dutch and Germans. Mr Macgregor characterises them as hospitable, kind, obliging, and as, generally speaking, a moral people. The island is governed by a lieutenant-governor, council, and House of Assembly consisting of eighteen members, who are elected by the people. Charlotte Town, the capital, is situated on the north bank of the river Hillsborough, on the east side of the island. The town stands on ground which rises in gentle heights from the banks of the river, and its harbour is considered one of the best in the Gulf of St Lawrence. A small group of islands

called the Magdalens have been recently annexed to Prince Edward's Island, chiefly as fishing establishments. The total area of the colony is set down at 2134 square miles, with a population of 47,000. The annual imports exceed £61,000; the exports, £47,000; the outward shipping, 30,000 tons; the inward, 24,000 tons. The revenue at present amounts to about £12,000, and the expenditure to £8000.

Newfoundland.

This colony, to which we have already adverted as deriving its sole importance from its productive cod-fisheries, consists of the large island of Newfoundland, the island of Anticosti, and of Labrador on the mainland. The entire area of the province is estimated at 57,000 square miles, and the population (settlers and Esquimaux) at 96,000; but these numbers must be taken merely as approximations. The islands are described as hilly, rocky, and barren, with rugged and indented shores, sparingly covered with timber of indifferent growth, and subjected to a cold and humid climate. The consequence is, that the agricultural operations of the settlers are limited to the precarious production of small quantities of potatoes, oats, and hay: their main supplies being imported from other countries. Fishing is the great object of industry, and the exports consist almost solely of dried and pickled cod, seal, cod and whale oil, seal-skins, herrings, sprats, and salmon—amounting yearly to £800,000 or £850,000. In 1842, Britain exported to the colony of Newfoundland produce and manufactures to the amount of £277,000, and imported from thence produce to the value of £247,000.

The administration of the colony is vested in a governor, with executive and legislative councils, and a House of Assembly, consisting of fifteen members. The principal town and port is St John, with a population of from 10,000 to 15,000. The settlements are confined to the shores, on account of the fisheries, which are conducted chiefly along the coasts of the island, off the shores of Labrador, and upon the well-known submarine banks which stretch towards the south-east into the depths of the Atlantic.

Belize or Honduras.

This settlement is far removed from the great mass of British America above described, being situated along the east coast of the Central States on the Bay of Honduras. Its area is ill defined, but has been estimated at 62,740 square miles, with a population of 9,000, of whom only 300 or 400 are whites. Its products and peculiarities are thus briefly described in the 'System of Universal Geography:'—'The coast is flat, and is bordered with reefs and low green islands called *keys*, which are divided by dangerous and intricate channels. From the coast the ground rises gradually into an elevated region covered with forests and marshes, and interspersed with rivers and lagoons. The climate is moist, but is said to be less unhealthy than that of the West Indies, especially during the wet season. (See No. 70.) The shores and river banks are covered with a deep and rich alluvial soil, capable of yielding most European as well as tropical products. The forests abound with some of the finest timber-trees, including mahogany and logwood, which are the staple productions of the settlement, and the cutting of which is the principal employment of the settlers. The profits, however, of this trade are exceedingly precarious. Cassava, yams, arrowroot, and maize, are grown, but only for home consumption; cocoa and an inferior kind of indigo are indigenous. Oranges and many other fine fruits are very abundant. European cattle and other domestic animals thrive greatly. The jaguar, tapir, armadillo, racoon, gray fox, deer of various kinds, and a vast number of monkeys, abound in the settlement; birds and fish are in great variety; and shell-fish are particularly plentiful. Many turtles are also taken on the coasts and sent even to London.'

Honduras is governed by a superintendent nominated by the crown, and by seven magistrates elected annually by the people. Belize is the only town and port, and is built upon both sides of the river of that name. The houses, constructed of wood, are raised eight or ten feet above the ground on pillars of mahogany; population between 4000 and 5000, of whom only a few hundreds are whites. The port of Belize offers considerable facilities for shipping, and has of late years become the depôt of British merchandise destined for the Central States. In 1842, the exports from Honduras to Britain exceeded £364,000; the imports from Britain about £120,000.

Little requires to be said respecting the trade of Canada, or of British America generally. To Halifax, Quebec, Montreal, St John, and other ports, shipments of English manufactured goods and foreign produce are regularly made, chiefly in spring and autumn, and the produce returned is wood, fish, oil, potashes, salted beef and pork, some butter and cheese, and of late a not inconsiderable supply of wheat and flour. The total of our exports to British America was, in 1846, about £3,308,059, while the military and civil expenditure incurred by the mother country is generally little short of £500,000, thus showing that, as regards commerce, Britain loses a considerable sum yearly by maintaining these colonies. British America is highly favoured by being permitted to send its produce at comparatively low duties to the home country; but from lack of capital or enterprise, this does not appear to have so important an effect as might be expected on the prosperity of the colonies. The comparatively independent, easy, and comfortable circumstances, with light taxes, experienced by colonial farmers, may perhaps account most naturally for the absence of ambition or enterprise among a scantily-educated and plain-living people.

GREENLAND.

This extensive insular or peninsular region—for its northern frontier is still undefined—occupies the north-eastern corner of the North American continent, and, together with the adjacent island of Iceland, is subject to Denmark. Surrounded, so far as is known, by the ocean, it lies compactly together, presenting comparatively few of those inlets and sounds usually so characteristic of northern regions. It is described as 'a barren mountainous country, nearly the whole surface of which is covered with perpetual ice and snow; which in many parts form glaciers to the very shores, where they appear as icy cliffs several hundred feet high.' The eastern coast generally rises in high masses of rock and ice close to the shore, and is beset during the whole year with enormous masses of ice which render vegetation almost impossible, and the fishing exceedingly precarious. Accordingly, only a few Esquimaux inhabit this quarter. The western shores (in Baffin's Bay) are also high and rugged, but being more indented by inlets, and less rigorous in climate, they are not so much encumbered with ice, and are more sheltered along the low grounds, which present a scanty vegetation of lichens, mosses, dwarf birch, and willow. The land animals are—the reindeer, the polar bear, the dog, hares, and foxes; the marine—whales, walruses, seals, cod and other fish, and sea-fowl in abundance. This region is accordingly better peopled, and it is here that the Danes have established a few petty settlements, chiefly commercial and missionary. The native population is estimated at 6000 or 7000, and the European at 150 or 160.

The chief employments are fishing, seal-hunting, and fowling; the settlers attempt the rearing of potatoes and a few culinary vegetables, and also the feeding of a few sheep, but, it must be confessed, with very indifferent success. The main dependence of the country is on its marine resources; hence the Danes export from their different settlements train-oil, fish, whalebone, sealskins, fur, and eider downs—the trade giving employment to five or six vessels. The imports in return are principally coffee, tobacco, snuff, and brandy. The country also reaps some advantage from

the numerous whaling vessels which frequent Baffin's Bay and Davis' Straits. Nevertheless it is a poor, dreary, and inhospitable, though not unhealthy region, offering no inducements whatever to the civilised settler.

UNITED STATES.

These States occupy the middle division of the continent, and are bounded on the north by British America; east by British America and the Atlantic; south by the Gulf and republic of Mexico; and west by the Pacific; having a frontier line of about 10,000 miles, a sea-coast of 3600, and lake-coast of 1200. They extend from latitude 25° to 49° north, and from longitude 66° 50′ to 124° west; the greatest length being 3000 miles, and greatest breadth about 1170. The area, including Texas, California, and the still unorganised territories, is vaguely estimated at 2,220,000 square miles, with a population of 18,000,000, of whom 17,063,353 belong to the Union Proper.

The *United States* were originally British colonies, but in 1776 declared themselves independent. At that time the territory extended only from the Atlantic to the Mississippi: all the country to the west of that river belonged to France; Florida to Spain; and Texas to the Mexican Confederation. In 1803, Louisiana or the French territory was added by purchase; in 1819 Florida was ceded in compensation for spoliations on American commerce; in 1842, Texas (which had revolted from Mexico in 1835, and erected itself into an independent republic) became part of the Union by voluntary annexation; and in 1848, California, which had revolted from Mexico in 1836, also joined the Union, thus giving to the States a seaboard on the west almost as valuable as that which forms their eastern boundary. The only states in the Confederation at its first formation were the thirteen marked with an * in the annexed table; all the rest have been formed out of the new territories, and partly by subdividing the original thirteen:—

States.	Sq. Miles.	Population.	Chief Towns.
Northern—			
Maine,	32,400	501,793	Augusta.
New Hampshire,*	9,500	284,574	Concord.
Vermont,	9,700	291,948	Montpelier.
Massachusetts,*	7,800	737,699	Boston.
Rhode Island,*	1,221	108,830	Providence.
Connecticut,*	4,789	309,978	Hartford.
Middle—			
New York,*	46,220	2,428,921	Albany.
New Jersey,*	7,948	373,306	Trenton.
Pennsylvania,*	46,215	1,724,023	Harrisburg.
Delaware,*	2,068	78,085	Dover.
Maryland,*	10,735	470,019	Annapolis.
Southern—			
Virginia,*	65,700	1,239,797	Richmond.
N. Carolina,*	51,632	753,419	Raleigh.
S. Carolina,*	31,565	594,398	Columbia.
Georgia,*	61,683	691,392	Milledgeville.
Alabama,	54,084	590,756	Tuscaloosa.
Mississippi,	49,356	375,651	Jackson.
Louisiana,	47,413	352,411	New Orleans.
Western—			
Ohio,	40,500	1,519,464	Columbus.
Kentucky,	40,023	779,828	Frankfort.
Tennessee,	41,752	829,210	Nashville.
Michigan,	60,537	212,267	Detroit.
Indiana,	35,686	685,866	Indianapolis.
Illinois,	56,506	476,183	Springfield.
Missouri,	70,050	383,702	Jefferson City.
Arkansas,	54,617	97,574	Little Rock.
District of—			
Columbia,	100	43,712	WASHINGTON.
Territories—			
Florida,	56,326	54,477	Tallahassee.
Wisconsin,	[illegible]	30,945	Madison.
Iowa,	[illegible]	43,112	Iowa City.
Texas,	[illegible]	100,[illegible]	Austin.
Oregon,	[illegible]	[illegible]	Astoria.
California,	[illegible]	[illegible]	San Francisco.

The territories of Florida, Wisconsin, and Iowa, formed in 1836, are under regular governments established by Congress, but not yet admitted as independent states; Texas retains, we believe, its own republican administration as adopted in 1835. With respect to the unorganised territories, that on the Kansas has been given to the natives for a permanent abode; and within the last twenty years many thousand Cherokees, Creeks, Choctaws, and other tribes, have been carried thither from east the Mississippi, with a pledge that they shall not be again compelled to remove. The Missouri territory is almost exclusively occupied by the wild Pawnees, Blackfeet, and other Indians; the Oregon, lying between the Rocky Mountains and the Pacific, and lat. 42° and 49° north, is also chiefly occupied by natives, with a sprinkling of trappers, and others connected with the fur-trade forts of the Hudson's Bay Company, and a few straggling settlers since the boundary settlement in 1847; and California, the youngest member of the Union, though possessing a sort of independent government before the treaty of union in 1848, is in reality an unorganised region inhabited by native tribes, hunting and trapping adventurers of Spanish origin, and latterly of adventurers of every character and description in search of gold ore in the alluvial deposits of its rivers.

Population.

The dominant population, as already stated, are of European origin. Those of *English* descent are found chiefly in the eastern states, Virginia, and the Carolinas; the *Germans* abound in the middle states, particularly Pennsylvania, where they constitute three-fourths of the population; the descendants of the *Dutch* are numerous near the Hudson and Mohawk in New York, of which state they were the original settlers; the *French* still form nearly half the inhabitants of Louisiana; the *Irish* and *Scotch* are numerous in the western parts of Pennsylvania, Virginia, and the Carolinas, and in most of the large cities of the Union; the *Negroes* are found chiefly in the states south of Pennsylvania and the river Ohio; parties of *Spanish* descent are to be found in California and Texas; and the native *Indians*, amounting perhaps to 300,000, are now entirely west of the Mississippi.

The rapid increase of population in the United States is one of the most interesting circumstances connected with their history. When the general style of living among any people is comfortable, and they continue at the same time to add rapidly to their numbers, it is a proof that their country affords abundant resources for subsistence, and that they have industry and skill to turn these to good account. England doubles the number of her people in about one hundred years, Scotland in one hundred and fifty; in America they are doubled in about twenty-five years; and it is reckoned that, by the end of a century from this date, if the same increase continues, the American population will be more than 200,000,000—a number greater than that of any nation at present speaking one language on the face of the earth. From the rapidity with which successive generations come forward, it is generally remarked that the number of aged persons in any neighbourhood appears small compared with the multitudes of young people by whom they are surrounded; and from the same reason the number of individuals below sixteen, who in other countries form hardly a third of the population, are in America fully one-half of the whole. The population at successive periods has been given as follows from the official census:—

	White People.	Blacks.
Population in 1790,	3,929,827	697,897
... 1800,	5,305,925	893,041
... 1810,	7,239,814	1,191,364
... 1820,	9,638,131	1,538,064
... 1830,	12,866,920	2,009,031
... 1840,	17,063,353	2,487,355

These returns show an average increase of 33 per cent. in ten years—a rate incomparably greater than has ever been witnessed in any other country. The number of persons who come from Europe to settle in the States is estimated variously, from 8000 to 12,000

or 16,000 yearly; the most accurate accounts incline to the former statement.

As might be expected, many of the cities in the Union have risen with unparalleled rapidity, and now contain large populations. Thus the population of New York in 1830 was 203,007; in 1840, 312,710; and in 1845, 371,102; Philadelphia in 1830, 167,118; in 1840, 258,037; Baltimore in 1830, 80,625; in 1840, 134,379; New Orleans in 1830, 46,310; in 1840, 102,193—that is nearly trebling its inhabitants in ten years. Boston in 1830, 61,392; in 1840, 93,383; and in 1845, 114,366; Cincinnati in 1830, 24,831; in 1840, 46,338; and Brooklyn, the last example which we shall give, 12,042 in 1830; 36,233 in 1840; and 59,566 in 1845!

Government—Army—Navy.

Each of the English colonies, as they settled in America, had had a certain form of government assigned it for maintaining the necessary order. This consisted generally of a House of Assembly, chosen by the people, with governor, judges, and other officers, appointed by the king, but paid out of taxes levied by the representatives. On acquiring independence after their war with the mother country, the different colonies, now called *States*, made such alterations, each in its own constitution, as they believed to be suited to their circumstances; and a general government, framed and appointed by the consent of the whole, was formed to take charge of such national affairs as the states could not manage separately. The States have each a Senate and House of Representatives; the members of the former are fewer in number than those of the latter, and a part of them only is chosen at each election, so that they remain in office for several years, generally four: the House of Representatives is elected anew every year. The resolutions agreed to by these two bodies for the government of the state, are afterwards submitted to a president or governor, whose sanction constitutes them part of the law. Both senators and representatives are paid for their attendance on the public business, generally at the rate of two dollars (or 9s. sterling) per day, besides an allowance for travelling expenses. The right of election resides in the people under certain limitations: in some states the possession of a certain property (about £50) is required in the electors: in others, the regular payment of certain taxes: in all, a residence in the state varying from two years to six months, is requisite. But there are only eight of the states in which black people are allowed to give votes. The judges and other magistrates are in some states elected by the people; in others, by the governor, subject to the approval of the two Houses: and their tenure of office is in some for a term of years; in others, during good behaviour; and in several, till the holder attain a certain age (about 70).

The general government of the United States is, like that of the states individually, a representative democracy, in which the people intrust the administration of affairs to executive and legislative officers of their own choice. At the head of the executive is a President, who, with a vice-president, is elected every four years, and must be a native-born citizen of the States. The legislative body consists of two Houses—the Senate and House of Representatives. The members of both Houses receive 36s. per day, with travelling expenses. The Senate is composed of two from each state, chosen by its legislature for six years. The members are required to be at least thirty years of age, to have lived nine years in the United States, and to be at the time of election residents in the state by which they are returned. The House of Representatives is chosen annually, and the members are required to be at least twenty-four years of age; to have resided three or four years in the state for which they are chosen; and, in one or two of the districts, to possess a certain property. There is one representative nearly for every 40,000 persons, five black men being reckoned in this enumeration equal to three white. The House of Representatives performs the duties allotted by the British constitution to the Commons' House of Parliament, and has the right, like them, of originating all bills for raising revenue; while the Senate, on the other hand, exercises the analogous functions of our House of Lords. Bills which have passed the two Houses have not the sanction of law till they are signed by the president, or, on his refusal, are voted a second time by two-thirds of each of the Houses. The President, Senate, and House of Representatives, are called the *Congress* of the United States, and their powers in making regulations concerning public affairs are defined and limited by the original articles of the constitution. Congress is prohibited, for example, from making any law concerning establishment or free exercise of religion, the liberty of the press, and freedom of speech, or the privilege of public meetings to express their opinions on the measures of government.

The judicial power is vested in one supreme court, and in such inferior courts as Congress may from time to time establish. The supreme court consists of a chief-justice and six associate justices, who hold a court in the city of Washington annually; besides which, each judge attends in certain districts to hold circuit courts with the local justices. The processes of law are in general simple and direct, and are not made difficult of access to the poor by any burdensome expenses.

According to the constitution, all men are equal, none possessing any hereditary rank over the other: but this universal and broadly defined principle of democracy is impaired by the circumstance of there being upwards of 2,400,000 blacks forcibly detained in the condition of slaves, besides upwards of 360,000 of a free coloured population, who are shunned as an inferior race, and denied various social advantages. The constitution is further defective in practice, by being evidently incapable of restraining popular violence; for it is an incontestable fact, that mobs frequently defeat the operation of the law, when distasteful to their feelings, and commit flagrant acts of severity upon individuals. Perhaps a better state of education may remedy this great grievance; meanwhile, it is too important a feature in the political condition of the people to be passed over in silence. Generally speaking, it may be said that popular opinion is the absolute governing power in the States, and cannot be withstood by any species of opposition. Popular opinion, whether right or wrong, enforces uniformity in external behaviour and profession of belief to a degree which would be denounced as despotic if exercised in a monarchical country.

The expense at which the entire government of the States is conducted, including the military and naval departments, is on a singularly economical scale. In 1846 the gross revenue of the States amounted to 29,499,247 dollars,* and the expenditure to 28,031,114; in 1847 the revenue was 26,346,790 dollars, and the expenditure (augmented by the war with Mexico) 59,451,177. In 1846 the national debt was 24,256,495 dollars; in 1847 it was increased to 45,659,659, at an annual interest of 1,059,039 dollars. The chief source of revenue is the customs, amounting in 1846 to 26,712,667 dollars, and in 1847 to 23,747,864; and the sales of public lands, amounting to 2,694,452 dollars in 1846, and to 2,498,355 in 1847. The chief items of expenditure are the civil list, which in 1847 amounted to 2,562,008 dollars; foreign intercourse, 391,113 dollars; miscellaneous, 3,762,732; military establishment, 13,579,428 dollars in 1846, and 41,281,606 in 1847; naval establishment, 6,450,862 in 1846, and 7,931,633 in 1847. The increase of expenditure in 1847 is fully accounted for by the war with Mexico: this also added considerably to the national debt, as several loans had to be effected; but as this war has now terminated, Mexico repaying the expense, and as the land sales are again on the increase, not only will the revenue

* The standard currency of the States is in dollars, silver coins worth about 4s. 3d. sterling each; each dollar is equal to 100 small copper coins called cents, from *centum*, a hundred.

exceed the expenditure, but a considerable portion of the debt be annually cancelled.

The *army*, according to the law of 1842, consists of 9000 men; but the principal reliance of the country for defence is in the militia of the several states, amounting altogether, in 1848, to 1,888,538 men. In this body the men acquire a certain knowledge of military exercises, but submit very little to subordination. There is a military academy for educating young men as officers; the number under tuition is limited to 250; and the instruction given is well fitted for training their minds to knowledge and gentlemanly feelings: the course consists of natural and experimental philosophy, mathematics, engineering, ethics, drawing, and the usual military exercises. The young men educated here are received into the army as cadets, and their promotion is afterwards regulated strictly by seniority, except in extraordinary cases.

The *navy* consisted in 1848 of 11 ships of the line, 12 frigates of 44 guns, 2 frigates of 36 guns, 22 sloops of war, 4 brigs, 10 schooners, 5 bomb-vessels, 14 steamers, and 6 store-ships and brigs. The number of captains in the same year was 67, commanders 97, 327 lieutenants, and midshipmen 426. Besides the regular navy, there is also a *marine corps*, consisting, in 1848, of 53 officers and 1353 men. There are seven navy-yards, of which the principal are on Long Island, near New York, at Philadelphia, and at Washington. Recent events may have caused an alteration in this summary of the military and naval force.

Religion and Education.

All forms of religion are equally favoured by the state in America, and the members of all have equal privileges. None of the clergy are paid by government, or out of public property, in any shape; they depend for their salaries entirely upon the congregations for which they officiate, and by which they are elected. The bishops, ministers, elders, or other officers, are chosen by the members of each persuasion, according to their several forms of church government, without the intervention of any other party. There are a great number of different denominations of Christians in America; the principal are the same as in this country, consisting of Catholics, Protestant Episcopalians, Presbyterians, Quakers, and the various classes of Independents. In some of the states there are certain denominations more prevalent than others. New England, for instance, was settled by the Puritans in Cromwell's time, and its religious condition bears the impress of that origin. Maryland was colonised by Roman Catholics, who are still numerous there: Pennsylvania by the Quakers or Friends; while Episcopacy prevailed in Virginia, the Carolinas, and Georgia. The first Presbyterians came from England, Scotland, and Ireland, and settled in Delaware and New Jersey. If the whole population of the States were divided into twelve parts, three of them would be Calvinists, chiefly of the Independent and Presbyterian sects; two Baptists; two Methodists; one Episcopalians and Lutherans. The rest include persons of many various forms of belief, and a considerable number who follow no definite or recognised religious profession.

There are about sixty colleges and seminaries for the education of young men devoted to the church, of all the different sects. In New York, it is found that there is 1 clergyman to every 1334 of the population; in Pennsylvania there is 1 to every 1123; in Kentucky, 1 to every 1377 of the white inhabitants. In Great Britain, the proportion is 1 to every 800 or 900—in Europe generally, 1 to every 1000. It must be recollected, however, that in America this whole number are actually employed in the ministry: there are none of them who are merely dignitaries, or who hold offices without labouring for the instruction of the people: this renders the proportion of actual religious teachers greater than at first sight it appears, when compared with the number of clergymen in European countries.

The remarks we have here made apply exclusively to the New England states, and to the older settled districts of the east; they may also perhaps be extended to the *towns* of the newly-formed western states, in which much attention is given to religion. In the slave countries, however, this condition is altogether reversed. North Carolina, with a population of 600,000, has hardly fifty clergymen; and South Carolina, with 420,000 inhabitants, has not more than forty. In Georgia there were only ten in 1818. In Virginia, the population is about 1,000,000; the number of clergymen not 100. The situation of Maryland is similar.

In the countries on the Ohio, Michigan, &c. which are in progress of settlement, there are no regular churches except in towns; the only opportunity the colonists have of attending sacred ordinances being at field-meetings, which are held in the forests, and are sometimes continued for several days. The first settlers in these districts are generally rude men, and little heedful of religious matters; but these meetings serve to keep alive among them a feeling of what is due to their character in this respect, and, as the population becomes more dense, gradually lead to the establishment of regular pastors and churches.

The state of the people in respect to education is very different in different parts of the States. In the old settled districts, the proportion of well-informed and well-educated people is greater than in most countries of Europe. In the slave states of the south, and in the western districts, which are as yet only occupied by a thinly-scattered population, the number who can read and write is very small in proportion to the population. Some idea of these different conditions in respect to education, may be formed from the following account of the number of students at college in the different districts in proportion to the whole inhabitants of each:—

In the eastern or free states,	1 student to	1231	inhabitants.
... middle slave states,	1 ...	3465	...
... southern slave states,	1 ...	7232	...
... western or new states,	1 ...	6060	...

According to the census of 1840, there were 173 universities and colleges (including theological and medical institutions), with 16,233 students; 3242 academies and grammar-schools, with 164,156 students; and 47,209 common and primary schools, with 1,845,244 scholars—or about 1 in 9 of the entire population. In 1848, there were within the Union 118 colleges, with 897 professors and 10,898 students; 42 theological schools, with 118 professors and 1317 students; 12 law schools, with 21 professors and 385 students; and 36 medical schools, with 238 professors and 4727 students.

In the New England states the means of instruction provided for the children of the labouring classes are in general such as to put the knowledge of reading, writing, and arithmetic, within the reach of all. Every state has a public fund set apart for paying the salaries of teachers; and if this is not sufficient to provide one for each township, the inhabitants are expected to assess themselves to make up the deficiency. They generally elect school-committees, who build school-houses, choose teachers, and apportion funds, according to the necessities of each parish. Children are entitled to attend at these seminaries without any charge but that of paying for the books which they use. In order further to secure the education of young people who may be obliged to go early to *service*, it is common in these states to stipulate *schooling as part of their wages*. The result of all this is, that the number of people of the working-classes who can read and write is here fully greater than in any country of Europe, not even excepting Scotland or Switzerland. The means of education are seldom awanting, while the wages of the labouring classes enable them to provide books, and to maintain their children at school for a longer period than can be easily done in Europe, where their services are soon required to assist in maintaining the family. It is remarked, that 'though the number of learned and scientific characters is much smaller than in France

or England, the mass of the population are better informed than in either of these countries. Reading the journals universally, and knowing a little of what is doing at home and throughout the world generally, they betray none of that awkwardness which springs from conscious ignorance.'

It must not be supposed, however, that this general account of the state of education applies equally to every district. It relates, indeed, chiefly to the great towns, and to the thickly-peopled places in their neighbourhood. The remote townships, which in a country so lately occupied form a large proportion of the whole area, are frequently as much deficient in the means of instruction as in regard to religious edification; and they have indeed little anxiety to improve themselves. Many of them pay no attention to the regulations for establishing schools, and, were it left to themselves, would allow their people to remain as they are, without either reading or writing. In America, however, as in most other free countries, the well-informed portion of the community is the most active, and, like the little leaven which leavens the whole lump, it is continually at work to stir up a desire for information and light in all the dark places around it. In all the newly-settled states, lands have been allotted for the erection of academies, and the establishment of regular district or parochial schools, according as the population increases; 640 acres are generally set apart in each township for this purpose, besides one or two entire townships in each state for university funds.

Minerals—Mining.

There is a great variety of useful minerals distributed through different parts of the States. Coal may be mentioned among the first: it exists through all the country, lying north of a line drawn from Philadelphia to the mouth of the Ohio, and is particularly abundant on the upper waters of the Susquehanna, as well as on the Alleghany and the Monongahela. At Pittsburg there is a hill principally composed of coal, and it is found at many places in this district within a few feet of the surface. There are extensive coal-mines also on the Roanoke and Appomatox in Virginia. In 1840 there were raised in the States 27,603,191 bushels of bituminous coal; and 863,489 tons of anthracite.

The country on the Ohio is particularly rich in mineral productions. The whole district is bottomed on limestone, on which rests the wide and valuable coal formation mentioned above, extending from the head waters of the Ohio, in Pennsylvania, to the river Tombigbee. Iron ore is found abundantly in the same district, principally towards the upper part of the Ohio; bog ore is found in the valleys of the Alleghany chain; and various kinds of ores of the same metal are met with in the New England states. In 1840 there were produced 286,903 tons of cast-iron, and 197,233 tons of bar-iron. Black lead, in veins of from five to six feet wide, traverses the states of New York, Jersey, Virginia, Carolina, &c. Copper ore is found in Virginia, in Connecticut, in New Jersey, and abundantly in the neighbourhood of the lakes, and in Illinois.

Gold mines have been traced extending through a large tract of country in the western parts of Virginia, North and South Carolina, and Georgia: they are wrought to a considerable extent, 20,000 men being employed at the different workings. The annual produce varies widely—ranging from £120,000 to thrice that amount; but we have not heard what proportion of this is expended in the work, or what actual profit has been realised. One singular fact is remarked concerning these mines, which is, the indubitable evidences found that they have been wrought at some period before America was known to the Europeans. Many pieces of machinery which were used for this purpose have been discovered in the workings, among which were several crucibles of earthenware, which are far better than those now in use. Since 1848, the gold diggings of California have thrown the mines of the southern states, as well as those of every other region, in the shade; the produce is evidently immense, but current reports are yet too vague to be of anything like statistical value.

Silver and its ores are not of frequent or extensive occurrence. Mercury has been found native in Kentucky, but it occurs plentifully in the ore as bituminous cinnabar, through the Ohio and Michigan territory. It is found in the soil as a black or red sand, sometimes as a fine red powder, and at other times in iron clay. There are lead mines of vast extent on the Missouri; they are said to occupy a surface of 600 miles in length, and 200 in breadth. One miner will raise about 2000 lbs. per day, which sell for 45 dollars, and yield 1200 lbs. of pure lead. In 1840, the amount of pig lead exceeded 31,200,000 lbs.

Epsom salts, Glauber salts, and nitre, are found in Ohio and Indiana; the two latter in caves, the former in a thin layer on rocky surfaces. Salt, which in countries far removed from the sea is an article of great expense, is produced from salt springs, or from borings in different parts of the western country. Mineral waters of valuable medicinal qualities occur at several places; the springs principally frequented are those of Saratoga in New England.

Agriculture and Crops.

In point of productive industry the United States is yet more an agricultural than a manufacturing country, though of late years an immense impetus has been given to the latter department. Oats, rye, and barley are raised in all the northern states, and also in the hilly districts of the south. Of barley, two crops in a season are obtained in favourable situations. Maize is common to every part of the Union, but thrives best in the middle states; it is a vegetable adapted to a greater variety of soil and climate than wheat, and yields a much larger produce. The sugar maple grows everywhere, but thrives best in the good maize districts. Wheat is also cultivated through the whole Union; but it is only a profitable crop to the north of the Potomac, or in the hilly districts of the south; in these situations it yields large returns, and of excellent quality; in the low warm districts it is not cultivated; these are more favourable to the rice crop. In general, it is remarked that the late wheat countries are favourable to the European constitution, and that in rice countries, which are warm and moist, the African population has a great advantage in respect to health and longevity over whites.

The cultivation of tobacco begins in Maryland, in latitude 39°; it is raised to a greater extent in that state and in Virginia than in any others of the Union; but it thrives also in all the western states. Cotton does not succeed well farther north than the latitude of 37°, though some of the districts raise it for domestic use; it forms the staple of all the districts south of the river Roanoke. The best kinds grow in South Carolina and Georgia, in dry situations, upon the sea-coast. The cultivation of rice occupies nearly the same region as that of cotton; it is a very unhealthy occupation for the slaves who are engaged in it. The climate which is favourable to sugar does not extend beyond the latitude of 32°; it is raised in the States chiefly for domestic use, and is not an article of export to any extent. The crop is rather precarious, from the frosts which sometimes occur even in the most southerly districts. Indigo has been tried in America, but could not come into competition with that of Bengal. The vine grows spontaneously in most of the southern and western states, and is cultivated as a fruit about Philadelphia. The mulberry-tree, hops, and hemp, all succeed well in the middle and western states.

The timber-trees of the States are of numerous kinds, and many of them of the best quality. There are twenty-six kinds of oak, of which eleven or twelve species are in request; the best for common purposes is the *white oak*, a tree which is found plentifully over the whole country: the *live oak* grows in marshy places near the sea, and has a hard, heavy, and durable timber,

much used for shipbuilding. There are eighteen kinds of pine, cedar, and larch; seven kinds of maple, three or four of which furnish sugar—the best is called the sugar maple; ten kinds of walnut-trees; four kinds of birch, the bark of one of which furnishes the Indians with canoes; six kinds of ash (the ash of this country is not of the number); besides many other trees, of very useful qualities. There are one hundred and thirty kinds which rise to a height of more than thirty feet; while in France there are only thirty-seven of that size. The flowering shrubs, *kalmia* and *rhododendron*, which are cultivated here with so much attention for their splendid flowers, grow wild on the sides of the American hills, to the height of fifteen or twenty feet. Even in the most thickly-peopled states there are still remaining large tracts of uncleared woodlands, which give the country a wild appearance, and form an aspect on the whole very different from anything seen in Europe, where forests have long been too valuable to be allowed to remain uncut.

The *crops* of the chief cultured articles in 1840, and the states ranking highest in production, were as follow:—Indian corn, 377,531,875 bushels—Tennessee, Kentucky, Virginia; wheat, 84,822,272 bushels—Ohio, Pennsylvania, New York, Virginia; oats, 123,071,341 bushels—in the same states; rye, 18,645,657 bushels—Pennsylvania; barley, 4,161,504 bushels—New York; potatoes, 108,298,060 bushels—New York and Maine; hemp and flax, 95,252—Virginia; rice, 80,841,420 lbs.—S. Carolina; tobacco, 219,163,319 lbs.—Virginia, Kentucky; cotton, 790,479,275 lbs.—Mississippi, Georgia, Louisiana, and Alabama; sugar, 115,110,809 lbs.—cane in Louisiana, and maple in the north; and silk, 61,522 lbs.—Connecticut. In the same year, the live-stock was estimated at 4,335,669 horses and mules; 14,971,586 neat cattle; 26,301,293 swine; and 19,311,374 sheep.

Manufactures.

The vast extent of culturable and prolific land in the United States, and the constant demand for large supplies for food, form a reason why the nation should resort more to agriculture than manufacturing industry as a staple employment. The Americans, nevertheless, from a strong desire to be independent of foreign countries for a supply of articles of clothing, have thrown themselves energetically into a course of manufacturing in relation both to soft and hard goods. At present they are engaged in a kind of rivalry with Britain, and it is certain that they are fast overtaking it, both in the excellence and cheapness of their products.

The manufactures which are followed with most advantage in America, and without fear of English rivalry, are those which produce articles too bulky or too heavy, in proportion to their value, to bear the expense of a long carriage, or of which the materials are found in the country, and can be wrought up there at less expense than by carrying them to cheaper tradesmen at a distance. Some of these branches may be mentioned—such as the making of soap, candles, and hats; tanning and working in leather, particularly bulky articles; building of carriages; making of all kinds of agricultural implements; carpentry, sawing, and turning of most descriptions; building of ships and steamboats; constructing and putting up of mill-work and machinery; distilling; the employments of goldsmiths, tinsmiths, and printers. There are several businesses, however, whose prospects depend chiefly on prohibiting the cheaper manufactures of England, and which of course are liable to be deranged by any alteration in the tariff laws: these are the making of glass and earthenware; spinning and weaving most kinds of cotton goods; making of woollens, carpets, &c.; most of the finer kinds of hardware, iron, steel, and brass; hempen goods and silk goods.

Within the last few years the manufacture of cotton has been conducted on a great scale by means of factories on the same plan as those in England. The cotton manufacture was introduced only in 1790, and in 1832 it was found that the number of mills in twelve states was 795, of spindles 1,246,503, of power-looms 33,506; of males employed in the manufacture 18,539, females 38,927—total employed, 57,466. The amount of capital now invested in this thriving branch of trade, is estimated at 50,000,000 dollars, equal to £10,000,000 sterling, being about a fourth part of the capital invested in the cotton manufacture in Great Britain. By procuring the cotton cheaper than can be done in England, the Americans have an important advantage; wages, however, are higher. The principal cotton manufacturing districts are in Massachusetts, Maine, and other states on the coast. The chief seat of the manufacture is Lowell in Massachusetts, and it may be termed the Manchester of America. Besides containing at least a dozen factories for cotton and woollen fabrics, Lowell possesses large machine-making establishments, which employ many hundreds of workmen.

Household manufactures of woollen, linen, and cotton, are made to a great extent. Many families spin, weave, and make up their own clothing, sheeting, table-linen, &c. They purchase cotton, and mix it up in the yarn with their linen and woollen stuffs; blankets, quilts, coverlids, stockings, mits, &c. are made chiefly in the family. These are perhaps neither so fine nor made so expeditiously as those of regular tradesmen; but they are produced for domestic use at times when there is no other employment, and in this manner may be said to cost nothing except the material of which they are made. It is supposed that nearly two-thirds of the domestic clothing is so made in country places, many families, as in Canada, having a loom in the house. It is the same with soap, candles, and maple-sugar, all of which are manufactured by the farmers at home. Attempts have recently been made, with great success, to introduce the manufacture of silk; the mulberry-tree grows spontaneously in the middle states, and the light easy labour which the collecting of the silk requires would afford employment to old people and females, enabling them to add to the income of their families, when they could not otherwise be able to do anything. Distillation and brewing are conducted upon a large scale, there being not less than 41,402,627 gallons produced in 1840; and a little wine is made in North Carolina and other places. Shipbuilding is extensively followed in Maine and Massachusetts. In 1848, there were 1598 vessels of all sorts built within the Union, having a tonnage of 243,732.

In the southern states there is little manufacturing; the inhabitants there depend on the northern states or on foreign countries for their supplies, and their exports are cotton, sugar, and other raw materials.

Commerce.

The wealthiest class in the United States is generally the merchants of large seaport towns. Commerce may be considered as forming the aristocracy of that country, and is regarded everywhere as highly honourable. Young people are educated for it with as much care as for the army, or for any of the learned professions. The manufactures and markets of foreign states—the quality, value, and profits of every commercial article—form the objects of their study, and prepare them for engaging in business with system and advantage. The same energy of character which has brought English commerce to the highest pitch, is carrying forward the United States in a similar career, but perhaps with undue speed. The chief fault of the American commercial character is an over-haste to be rich. This 'go-ahead' policy leads to wild speculations, on an extensive scale, which produce most disastrous results on the currency and finances of the nation. At an interval of every few years, the banks suspend payments of their notes in cash; debts due to foreign merchants and others cannot be liquidated, and money is scarcely to be had.

In the year ending June 1847, 14,229 vessels, with a tonnage of 3,321,705, entered the ports of the United States, and 14,370 vessels, with a tonnage of 3,376,998,

cleared out. Of this vast amount of shipping more than one-half belonged to the country—the number of American vessels entering being 7730, with a tonnage of 2,101,359, and of those clearing out 8102, with a tonnage of 1,220,346. In the same year, the gross imports of the Union amounted to 146,545,688 dollars, and the exports 158,648,622: of which 150,637,462 consisted of the growth, produce, and manufactures of the States. The largest items of export were—cotton, yielding upwards of 53,000,000 dollars; flour, 26,000,000; Indian corn, 14,000,000; tobacco, 7,000,000; pork, bacon, lard, and live hogs, 6,600,000; cotton piece goods, 4,000,000; rice, 3,600,000; and beef, tallow, hides, and horned cattle, 2,400,000.

The immense number of navigable rivers which run through the country in every direction, and discharge themselves into the ocean or the lakes, afford the means of a great internal trade. These facilities have been increased at many important points by canals, connecting the different rivers at points where they approach each other, or where they flow away in opposite directions from sources lying in the same neighbourhood. Between the southern and eastern states there is a constant interchange of commodities along the coast, and a similar trade goes on from the western states to the south, by the Ohio and its branches, down the Mississippi. New Orleans is the great entrepôt for the goods of the latter branch of internal commerce. The north-eastern states furnish rum, molasses, cordials, dried fish, European goods of all descriptions, and articles of small value, quaintly styled *notions;* and they take in return corn, grain, cotton, and tobacco, from the south; while from the western states are received hams, beef, lard, flour, &c. either for use or for exportation to the West Indies and the other parts of Southern America. The traffic from north to south along the coast is greater than might be inferred, even from this specimen of internal trade by the rivers; because the productions of the northern and southern districts on the sea-coast are as different from each other as those inland, while the states in that part of the country have been longer and more densely peopled. In 1848, there were upwards of 4000 miles of canal navigation; and upwards of 10,000 miles of railway chartered, of which about 5703½ were open. The roads, excepting those of New England, and the national one from Baltimore to St Louis on the Mississippi, 700 miles long, are very indifferent, being little better than forest tracks.

Peculiarities of Different Districts.

America is generally considered and spoken of as one country, its people as forming a single nation, and the remarks which are made with regard to one part of it are supposed to be equally applicable to all. No idea, however, can be more fallacious. The region which we term the United States is composed of sections of country as remote from each other as London is from Constantinople, or Madrid from Berlin: they lie under different climates, and the different circumstances under which their inhabitants are placed form in each a totally different set of manners. The English language is common to all, and they all profess the Christian religion; but in most other respects the difference between them is as great as between any two European nations. The great divisions under which the country ought to be viewed are the north-eastern or New England states, in which for the present may be included Pennsylvania; 2*d*, The southern or slave states, to which section also we may refer Kentucky and Tennessee; and 3*d*, The new states of the west, which are in progress of settlement. The manners of the New England states are formed on the model of those of our own country, and there are few circumstances in the nature of the climate which tend to produce any material alteration; it is among them only that due provision is made for the education of the people or for religious instruction. The productions of the soil—the modes of agriculture—the arts and occupations to which these give rise—the alternations of season—and many other things, have all a resemblance to those of our own country. They cultivate wheat and the other European grains; their garden vegetables, potatoes, turnips, carrots, cabbages, &c. are the same as ours; they employ the same domestic animals; and they use of course the same agricultural implements, the same grist-mills, &c. requiring also the same tradesmen to prepare and work them.

Even in these great divisions which we have pointed out, there are portions which differ exceedingly from each other. New Orleans, for instance, which belongs to the slave states, has a completely different set of manners from Charleston in Virginia. The former is a city of immense trade, situated at the mouth of the great river Mississippi; it contains a mixed population of blacks of all shades, and of white men from every nation in Europe. Its streets are crowded and speckled with people of every colour; its quays with ships of every country; and its wharfs are loaded with bales of goods from all quarters of the earth; some coming from Europe or from China, to be carried for three thousand miles up the inland rivers of America; others sent down these rivers some months' voyage, to be carried to the West Indies or the Mediterranean. The air of the place is unwholesome, and it is a mart where people hurry to make money before they be overtaken with disease and death. Such are the influences under which the manners and character of the people of New Orleans are formed. Charleston, on the other hand, is the capital of a wealthy agricultural state; the pursuits of the people are not decidedly commercial; the town is the resort of numerous country gentlemen, who pride themselves rather on the oldness and respectability of their families, and the extent of their property, than on the activity of their business habits. The gentry strive to keep up between themselves and their slaves an exterior resemblance to the feudal relations of Europe; coats of arms are fashionable, as are liveries for servants: there is a general air of elegance and splendour in the buildings of the town: some of the houses 'are real palazzos, surrounded with orange trees, magnolias, and other trees of an almost tropical climate.' There is considerable taste for the fine arts among the higher classes, and among the lower an absence of all that bustle and variety of language and dress which mark a great commercial city. It is obvious, therefore, that the manners of these two places can have very little in common.

If we glance at the northern states, we shall find a difference of a similar kind existing between New York and Philadelphia. The former city is the great thoroughfare of all emigrants and commercial agents who arrive from Europe; the people passing through it daily are sometimes estimated at 15,000 or 20,000; it lies at a central point, having communication by rivers, canals, and railways with the whole northern parts of the American continent. Grain, provisions, lumber, and manufactures are brought from countries a thousand miles inland, for exportation, or for the use of places along the coast which have not the same facility of conveyance. People arriving there are secure of finding a passage to every other city inland or coastways; hence the streets and quays are constantly crowded with travellers and their luggage. The extent of its commercial transactions gives a facility to those who wish to engage in any kind of speculation, because here they can always learn the prices or the demand for every article of American produce; hence there is a restlessness, bustle, and continual spirit of change among its population, or a great part of it, which it would be vain to seek elsewhere in Europe or in America. Philadelphia, on the other hand, though also a place of very extensive commerce, has fewer channels of communication with the distant inland countries, and has of course a smaller variety of produce either raw or manufactured: hence there is less speculation; business proceeds with more steadiness, but less apparent bustle; there is in the streets an air of quiet regularity, where every one seems to go easily and leisurely about his business: and the transit of strangers through

the place is but inconsiderable. The prevailing religion, which is Quakerism, has also a manifest influence in producing these effects. The influence of circumstances upon the manners of a people is nowhere more remarkable than it is here in the case of the negroes. Slavery is not permitted in this state; and the inhabitants do not countenance in all its severity that feeling of contempt with which black people are regarded in other parts of the Union; hence the Africans reside here in freedom and comfort, while they see their countrymen a few miles to the southward poor degraded slaves; and they are generally, in consequence, a contented, cheerful, and industrious caste.

Again, if we look at the western states, we shall find that though there is a certain uniformity of manners over the whole, they are here also differently modified, according to circumstances. Pittsburg, for instance, with the neighbouring towns, Wheeling and Steubenville, are in the centre of a country which is rich in various kinds of minerals—coal, iron, lime, &c.; they are therefore filled with a manufacturing population, and the pursuits, appearance, and manners of their inhabitants differ from those of the country around them, as those of Birmingham may be supposed to do from other places in the centre of England. The town of Cincinnati, again, which is situated on the Ohio, as these places also are, is a great inland depôt for merchandise to be exported or imported. Its inhabitants are merchants, attendants in counting-houses and warerooms, owners of river steamboats, and a population attracted by the general trade of the place; while there is also a large number occupied in the peculiar business of killing and salting for exportation the immense quantities of live-stock reared in the country.

MEXICO.

Mexico, occupying that portion of the North American continent which lies betwixt 16° and 42° north latitude, was conquered by the Spaniards, under Cortez, in 1521, and continued a colony of Spain till 1821, when it became an independent republic. From 1821 to 1835 the states were severally independent, but united into one federal republic, like the United States; in 1835 they resigned their separate independence, and became a consolidated or central republic. Mexico originally comprehended Texas, which revolted in 1835, and is now part of the United States; California, which declared its independence in 1836, and in 1848 also joined the United States; and Yucatan, which seceded so recently as 1841. The area of the country, as thus diminished, is estimated at about 900,000 square miles, with a population of from 6,000,000 to 8,000,000—of whom about one-half are Indian aborigines, 1,250,000 whites, and the remainder mixed races. The Congress of the Union consists of a president, vice-president, and of two legislative bodies—the Senate and the House of Representatives. Capital, Mexico, with a population of 140,000.

Geographically, about one-half of Mexico lies within the tropics, while the rest belongs to the temperate zone; but a large proportion of the tropical region enjoys a mild temperate climate in consequence of its elevation—being from 6000 to 7000 feet above the sea. In the course of this tract, some of the heights already adverted to rise to the level of perpetual snow. 'The table-land (see Vol. I. p. 57) gradually declines towards the temperate zone; but the descent towards the coasts, especially the east coast, is by a gradual series of terraces, which produce an extraordinary diversity of vegetation, and at the same time oppose great difficulties to the communication between the maritime districts and the interior. In the equinoctial region there are only two seasons, the wet—from June to September—and the dry, which lasts for eight months; and in this district the different climates rise, as it were, one above the other from a temperature of 80° on the coast to 62° in the interior. The coast is humid, and unhealthy for strangers; but the table-land is remarkable for its salubrity, and it is here that the population is concentrated. The summit of the table-land is almost destitute of vegetation, but the other districts are generally productive. Maize is the chief object of culture; besides which, the banana, manioc, cereal grains, rice, and the potato form the common food of the people. The narrow insalubrious plain along the coast called the *tierra caliente*, or hot country, is remarkable for its luxuriant vegetation. The chief productions of this region are the sugar-cane, cotton, cocoa, indigo, and tobacco. The southern part of the country forming the isthmus is celebrated for the variety and importance of its woods and drugs, including logwood, caoutchouc, vanilla, jalap, storax, and the trees upon which feed the cochineal insect. Vast herds of horses, mules, and horned cattle also cover the plains of the southern district.

The mines of Mexico, however, constitute the chief source of its wealth, particularly those of silver, which are the most productive in the world. Gold is also to be found, though in lesser quantities; and copper, tin, iron, lead, and mercury occur in various districts. Manufactures are generally in a rude state; agriculture indifferently attended to; and trade and commerce incessantly injured and obstructed by the internal dissensions of the country.' The 'Cyclopædia of Commerce,' from which we extract these remarks, estimates the exports (chiefly silver, gold, cochineal, woods, drugs, and dye-stuffs) at from £3,000,000 to £3,500,000 annually, but this must be taken as a mere approximation. As to the imports, there are no data whereupon to form any estimate: they consist chiefly of soft goods, hardwares, wines, brandy, and spices. Britain sends annually upwards of £450,000 of produce and manufactures; the United States about £150,000. The chief ports for foreign trade are Vera Cruz, Tampico, and Campeachy, in the Gulf of Mexico; and San Blas, Mazatlan, and Acapulco, on the Pacific seaboard.

CENTRAL AMERICA.

The United States of Central America, or, more briefly, the Central States, include that narrow tract of the continent which lies between Mexico on the north and the isthmus of Panama on the south—being about 1000 miles in length, and from 80 to 250 in breadth. Their area is estimated at 186,000 square miles, and their population at 2,000,000. The country was formerly the captain-generalship of Guatemala; but in 1823, the people adopted a constitution providing that the government should be vested in a Federal Congress, a Senate, and a President. The states constituting the confederacy are Guatemala, Honduras, Nicaragua, Costa Rica, and the federal district of San Salvador. The country is extremely diversified, well watered, fertile, rich in minerals, favourably situated for commerce, has numerous ports on both seaboards, and is altogether calculated to support a large and thriving population. The exports chiefly consist of specie, indigo, cochineal, brazil wood, and other articles of tropical produce, amounting to about £1,000,000 annually. The imports are cotton and woollen fabrics, hardware, and other dry goods from Britain; silks, wines, and trinkets, from France and Spain.

YUCATAN.

This state comprises the peninsular district situated between the Gulf of Mexico and the Bay of Honduras, containing an area of about 76,000 square miles, with a mixed population of 570,000. Till 1841, Yucatan formed one of the members of the Mexican Confederation, but the people then separated from the Union, declared themselves independent, and adopted a constitution on the most liberal political, religious, and commercial principles. In physical aspect, natural produce, and industrial pursuit, the country closely resembles Belize and Mexico already described. Besides some measure of modern importance, it also lays claim to considerable antiquarian interest, from the ruins of certain gigantic sculptured structures which are found at Oxmutal and other places. (See Vol. I. p. 433).

SOUTH AMERICA.

This great division of the western hemisphere is a peninsula of a triangular form connected with North America by the narrow Isthmus of Panama. Projecting its apex far into the Southern Ocean, its western shores are washed by the Pacific, its eastern by the Atlantic, and its base by the Atlantic and Caribbean Sea. It extends from latitude 12° north to 52° 30′ south, or including the Archipelago of Terra del Fuego, to 56°—the small island called Cape Horn, in that parallel, being generally reckoned the extreme point of South America. Taken at its widest part—from Cape St Roque in Brazil, to Cape Blanco in Peru—it

extends from longitude 35° to 82° west. Its area is estimated at 6,800,000 or 7,000,000 square miles, of which about two-thirds lie within the tropics.

SUPERFICIAL FEATURES—GEOLOGY.

The *physical configuration* of the continent is thus arranged by an American authority:—1. The low belt of country skirting the shores of the Pacific, from 50 to 150 miles in breadth, and 4000 in length, of which the two extremities are fertile, and the middle sandy and arid. 2. The basin of the Orinoco, enclosed by two branches of the Andes, and consisting of extensive plains called *llanos*, either destitute of wood, or merely dotted with trees, but covered during part of the year with high herbage. 3. The basin of the Amazon, a vast plain, embracing a surface of more than 2,000,000

square miles, possessing a rich soil and humid climate, almost entirely covered with dense forests, and impenetrable jungle-marshes by the river sides. 4. The great valley of the Plata, occupied chiefly by open plains called *pampas*, in some parts barren, but in general covered with weeds, thistles, and tall grasses, on which feed prodigious herds of wild horses and cattle. 5. The high country of Brazil, eastward of the Parana and Uruguay, presenting alternate ridges and valleys, covered with wood towards the Atlantic, but opening into grassy steppes in the interior.

Everything in South America is upon a grand scale. The mountains, the rivers, the forests, the plains—every feature of nature, in short, is characterised by magnificence and sublimity, and calculated to excite alternately admiration and wonder. In one point are seen mountain-summits above the clouds, white with snows that never melt, while round their bases grow the banana and pine-apple. In other places are to be seen ever-living volcanoes, throwing out flames, smoke, ashes, and stones. Then, again, we have vast and dark forests, which never yet rang to the woodman's axe, where vegetation prevails in its most gigantic forms. 'In the interior of the new continent, says Humboldt, we almost accustomed ourselves to regard men as not being essential to the order of nature. The earth is loaded with plants, and nothing impedes their development. An immense layer of free mould manifests the uninterrupted action of organic powers. The crocodiles and the boas are masters of the river; the jaguar, the peccari, the dante, and the monkeys, traverse the forest without fear and without danger; there they dwell as in an ancient inheritance. This aspect of animated nature, in which man is nothing, has something in it strange and sad. To this we reconcile ourselves with difficulty on the ocean, and amid the sands of Africa; though in these scenes, where nothing recalls to mind our fields, our woods, and our streams, we are less astonished at the vast solitude through which we pass. Here, in a fertile country, adorned with eternal verdure, we seek in vain the traces of the power of man; we seem to be transported into a world altogether different from that which gave us birth.'

The *mountains* which traverse the continent may be ranked under two systems—the Cordilleras or Andes Proper, and the Brazilian Andes, so called from the Peruvian word *anti*, signifying copper. The former, in several parallel chains, extend from the Straits of Magellan to the Caribbean Sea, in many places spreading out over a breadth of several hundred miles, embracing lofty table-lands, containing mountain lakes, and everywhere intersected by steep narrow valleys, ravines, and lofty waterfalls. At Popayan, the main chain divides into three ridges, one of which, shooting off to the north-west, passes into the Isthmus of Panama; a second separates the valleys of the Cauca and Magdalena; and a third, passing off to the north-east, separates the valley of the Magdalena from the plains of the Meta. The highest summits of the system are between 15° and 17° south, where Sorata reaches the elevation of 25,350, and Illimani that of 24,200 feet; throughout Chili and Peru they range from 15,000 to 23,000 feet; in Colombia from 12,000 to 18,000 feet; and in Patagonia from 4000 to 8500. Altogether, the Andes present a most magnificent spectacle to the voyager on the Pacific; the snow, which permanently covers their lofty summits, even under the burning sun of the equator, contrasting beautifully with the deep blue of the sky beyond; while occasionally another contrast is exhibited in vast volumes of smoke and fire, emitted from some of the numerous volcanoes which stud the entire range. The Brazilian Andes, on the other hand, occupy a great breadth of country, but seldom exceed an elevation of 6000 feet.

The *geology* of the continent, so far as can be ascertained by a number of observations at distant and detached points, seems to present every formation—from the granite and primary schists, to the most recent alluvium and volcanic scoriæ. In all the mountainous regions primary rocks prevail, broken through by secondary traps, and capped by recent lavas. In the lower grounds, secondary rocks, up to the coal-measures and the chalk, have been detected; while the pampas and low plains, as proved by the researches of Mr Darwin, are of true tertiary and post-tertiary origin, of comparatively recent elevation, and replete with the remains of the megatherium, megalonyx, toxodon, and other creatures allied to the elephant, rhinoceros, tapir, llama, &c. but of more gigantic proportions and stranger configuration. (See GEOLOGY, No. 2, Vol. I.)

The *mineral* wealth of South America, though not perhaps the El-Dorado which our forefathers imagined, is unexcelled by any other continent. Gold is found abundantly in New Grenada, Brazil, Chili, Peru, and Bolivia; silver in Peru, Bolivia, Chili, and La Plata; tin and quicksilver in Peru; copper, lead, iron, &c. in various districts; coal in Chili and Panama; salt in Grenada and La Plata; nitrate of soda also in La Plata; diamonds in Brazil; emeralds, amethysts, and other precious stones in all the higher regions.

HYDROGRAPHY, &c.

The *islands, capes, straits, gulfs*, &c. connected with the surrounding seas of the continent present no very remarkable features. The chief islands are—the alluvial flats in the estuary of the Amazon; the Falkland and Georgian groups on the south-east, belonging to Britain; the desolate and rugged clusters of Terra del Fuego and Patagonia; the memorable islet of Juan Fernandez, off the coast of Chili; and the equatorial group of the Gallapagos in the Pacific. The more prominent capes are St Elena and Blanco on the west, Cape Horn on the south, and Frio and St Roque on the east. The principal strait is that of Magellan, about 300 miles long, with a breadth varying from 1½ to 40.

The *rivers* of South America are only excelled in magnitude and number by those of the northern portion of the hemisphere. The Amazon, the largest of rivers, spreads its hundred giant arms over a basin of more than 2,000,000 square miles in extent. It has a course of 4000 miles, and, with its branches, affords a boat-navigation of not less than 50,000. The La Plata has a course of 2400, receives the important affluents Parana, Pilcomayo, and Salado, has a basin of 1,200,000 square miles, the waters of which afford a navigation of 20,000 miles. The Orinoco has a course of 1800 miles, drains a region of 400,000 square miles, affording, with its affluents, a navigation of 8000. Indeed many of the tributaries of these giant rivers are larger than the largest of European rivers. The other independent rivers deserving of notice are the Magdalena, Tocantins, Parnaiba, San Francisco, Uruguay, and Colorado. As already stated, there are several fresh-water lakes situated in the high table-land of Bolivia and Peru—the largest of which is Titicaca, at an altitude of 12,700 feet, about 240 miles in circuit, and covering an area of 5400 square miles. The salt-lakes of La Plata are also of considerable size, but so shallow, that many of them are annually dried up, leaving saline incrustations of common salt, nitrate of soda, and the like, which are of considerable economical importance.

CLIMATE—BOTANY—ZOOLOGY.

The *climate* is thus described by Malte Brun:—'The three zones of temperature which originate in America, from the enormous difference of level between the various regions, cannot by any means be compared with the zones which result from a difference of latitude. The agreeable, the salutary vicissitudes of the seasons, are wanting in those regions that are here distinguished by the denominations of frigid, temperate, hot, or torrid. In the frigid zone, it is not the intensity, but the continuance of the cold, the absence of all vivid heat, and the constant humidity of a foggy atmosphere, that arrest the growth of the great vegetable productions, and in man perpetuate those diseases that arise from checked perspiration. The hot zone of these places does not experience excessive heat, but it

is a continuance of the heat, together with exhalations from a marshy soil, and the miasmata of an immense mass of vegetable putrefaction, added to the effects of an extreme humidity, that produces fevers of a more or less destructive nature, and spreads through the whole animal and vegetable world the agitation of an exuberant but deranged vital principle. The temperate zone, by possessing only a moderate and constant warmth, like that of a hothouse, excludes from its limits both the animals and vegetables that delight in the extremes of heat and cold, and produces its own peculiar plants, which can neither grow above its limits nor descend below them. Its temperature, which does not brace the constitution of its constant inhabitants, acts like spring on the diseases of the hot regions, and like summer on those of the frigid zone. Accordingly, a mere journey from the summit of the Andes to the level of the sea, or *vice versâ*, proves an important medical agent, which is sufficient to produce the most astonishing changes in the human body. But living constantly in either one or the other of these zones must enervate both the body and the mind by its monotonous tranquillity. The summer, the spring, and the winter are here seated on three distinct thrones, which they never quit, and are constantly surrounded by the attributes of their power.'

Of the *vegetable* productions more especially characteristic of the continent, we may mention the following —referring to the West Indies and the southern parts of North America (No. 68) for the more general and common forms:—The forests of Brazil and other tropical parts present the most luxuriant vegetation of palms, and tree-ferns tangled with rope-vines and other climbers, and studded with the strangest forms of the orchidaceæ. Here also flourish the mahogany and other timber-trees; the dye-woods of commerce; the banana, anana, cocoa, chocolate; the chincona, or Peruvian bark; the native potato; the caoutchouc-tree, Brazil-nut, castor-bean, pine-apple, agavé, and cactuses of innumerable species; while the rivers are covered with gorgeous floaters, among which is the celebrated Victoria Regia of Schomburgk. In the high grounds of Peru and Bolivia, the auracaria, the milk-tree, and gigantic courbaril, are met with; in Paraguay, the matté, or Paraguay tea-tree; La Plata is noted for its extensive thistleries; under the tropics are cultivated coffee, sugar-cane, cocoa, chocolate, tapioca, indigo, tobacco, cotton, and a thousand luscious fruits; while in Chili, 'the Italy of South America,' are grown the vine, olive, and ordinary European grains.

The *animals* deserving of notice are the wild horses and oxen of the pampas (none of which existed till introduced by Europeans); the llama or alpaca of the Andes; the tapir, jaguar, and tiger-cat; ant-eater, sloth, monkeys; the crocodile, guana, boa-constrictor, tree-frog, and other reptiles; the condor, rhea, albatross, and innumerable sea-fowl, whose droppings on the rainless islets of Peru constitute the *guano* of commerce; the electric eel, Silurus, and other curious fishes; the cochineal insect, gigantic spiders, centipedes, luminous flies, and other insect forms unknown to the old world.

POPULATION—GOVERNMENTS.

The *population* of South America is small compared with its extent and fertility, the general estimate being 14,517,000—of which 1,100,000 may be whites, 4,000,000 Indians, 3,050,000 blacks, and the remainder mixed races. The whites are chiefly of Spanish origin, except in Brazil, which was settled by the Portuguese; in Guiana, where there are a number of English, French, and Dutch; and in the city and district of Buenos Ayres, where there are also a few English and French. The Indians, once the sole possessors of the continent, were subdued in the early part of the sixteenth century by the Spaniards and Portuguese; but they still retain their independence in Patagonia and on the upper waters of the Amazon. They belonged chiefly to four families of the American variety—namely, the civilised Toltecans of Bogota, Peru, and Chili; the rude and robust Brazilians, occupying the eastern section of the continent from the Orinoco to the La Plata; the gigantic and brave Patagonians; and the miserable Fuegians. The religion of the aborigines was, as it is for the most part still, idolatrous; the Roman Catholic ritual prevails in the states originally settled by the Spaniards, Portuguese, and French; and Protestantism in British and Dutch Guiana.

From their original establishment till the beginning of the present century, all the South American states were subject to European nations; but during the troubles in Spain and Portugal, their colonies threw off the yoke, and became independent. Since their independence, the Spanish provinces, after much contention and division, have formed themselves into the *republics* of Venezuela, New Grenada, Ecuador, Peru, Bolivia, Chili, La Plata, Paraguay, and Uruguay. Brazil is a limited *monarchy*, under a sovereign styled emperor; and the only *colonies* are the small ones of British, Dutch, and French Guiana, to which may be added the Falkland Islands, now governed and protected as a British dependency. The following table exhibits the names, extent, population, and chief towns of the different states, including Patagonia, which is not yet claimed by any civilised power:—

States.	Sq. Miles.	Population.	Chief Towns.
Venezuela, -	400,000	1,000,000	Caracas.
New Grenada,	425,000	1,600,000	Santa-Fe-de-Bogota.
Ecuador, -	200,000	680,000	Quito.
Peru, - - -	480,000	1,500,000	Lima.
Bolivia, - -	440,000	1,400,000	Chiquisaca.
Chili, - - -	155,000	1,180,000	Santiago.
La Plata, -	890,000	1,700,000	Buenos Ayres.
Paraguay, - -	80,000	240,000	Assumption.
Uruguay, -	68,000	90,000	Monte Video.
Brazil, - - -	3,192,000	4,800,000	Rio Janeiro.
B. Guiana, -	67,000	100,000	Georgetown.
D. Guiana, -	36,000	78,000	Paramaribo.
F. Guiana, -	27,000	22,000	Cayenne.
Patagonia, -	340,000	110,000	...
Falkland Isles,	135,000	17,000	Port Louis.
Total, - -	6,935,000	14,517,000	

Such are the existing political divisions, which we shall now describe in detail, remarking once for all that the industrial pursuits of the people are as yet chiefly limited to the raising and collecting of raw produce for shipment to Europe, from which most of the manufactured articles are received in exchange.

VENEZUELA.

On the death of the celebrated Bolivar in 1830, Venezuela, New Grenada, and Ecuador—the three component states of the old Spanish territory of Colombia —peaceably agreed to become independent of one another. The limits of these states are nearly the same as they were when each was a separate province subject to Spain. Their constitutions are based on the most liberal republican principles, and they are leagued together for mutual support against foreign aggression. The national debt of Colombia was equally divided amongst the three states in December 1834; slavery was abolished; and, upon the whole, they are likely to go on much more peaceably and rationally apart, than if they were united under one head.

Venezuela extends from the republic of Ecuador to 12° of north latitude, and from 60° to 71° west longitude. On the north and east it is washed by the Atlantic Ocean, and has a number of available ports. The most remarkable feature of the country is the great river Orinoco. It is also traversed by the Andes; and the great lakes of Maracaybo and Valencia belong to its territory. The northern part is mountainous; but in the south, on the banks of the Orinoco, are those immense plains or *llanos*, the climate of which is hot, and in some parts unhealthy. The year is completely divided into the rainy and the dry seasons; the former commencing in November, and ending in April. The

productions are sugar, coffee, indigo, cotton, and tobacco. The plains on the Orinoco furnish extensive pastures, which support numerous herds of cattle. Venezuela is partitioned into four departments, and further divided into twelve provinces, which contain in all a population of nearly 1,000,000. The annual budget is somewhat under 2,000,000 piastres; and according to the division of the national debt already noticed, £1,941,705 fell to the share of Venezuela. The patronage of the church has been taken from the archbishop of Caracas, and is now in the hands of the president. Tithes are abolished, the clergy being paid by the state. Monastic institutions and missions have been done away with, their income and possessions being applied to the uses of the National College established at Maracaybo for public instruction. The principal towns of Venezuela are Caracas, with a population of probably 40,000; Cumana, a sea-port, with 25,000 inhabitants; Varinas, with 12,000; and Maracaybo, situated on the margin of the great lake of the same name, which has 25,000 inhabitants. The cultivation of the soil and the rearing of cattle are the great objects of industry in this republic. The chief articles of export are cocoa, coffee, sugar, tobacco, cotton, hides, dye-woods, sarsaparilla, Peruvian bark, balsam, indigo, furs, &c. The imports are for the most part the fabrics of England and France. It is difficult to state with certainty what the exports and imports may amount to respectively, but the former may be estimated at 2,000,000, and the latter at 4,000,000 of piastres. (A piastre is equal to 4s. 3¾d. sterling.)

NEW GRENADA.

This republic is bounded on the north by the Caribbean Sea and Guatemala; on the east by Venezuela and Guiana; on the south by the Amazon and Ecuador; and on the west by the Pacific Ocean. The great chain of the Andes traverses this country, and the mountains are extremely rich in gold and silver; and there are also mines of platina, copper, lead, and emeralds. The value of gold and silver produced annually is stated at £650,000. It is divided into five districts and thirteen provinces, the united population of which exceeds 1,600,000. Santa-Fe-de-Bogota is the capital of the republic; it has a population of about 40,000. Here a national academy was opened in 1833. In 1835 the income amounted to 2,337,836 dollars, and the expenditure to 2,211,554 dollars, leaving a balance of 126,282 dollars for payment of the interest of the national debt—the share falling to New Grenada being above £3,000,000. The principal articles of export are cocoa, indigo, tobacco, coffee, hides, and cattle. The imports are manufactured goods of almost every description. What the value of these may be it is impossible to say, for the contraband trade has been carried on in the country to an almost unparalleled extent.

ECUADOR.

The territory of the Equator comprehends the ancient presidency of Quito. On the south it borders on Peru and Brazil, the latter country forming also its eastern boundary; on the north its limits are New Grenada; and it is washed by the Pacific Ocean on the west. This republic is intersected by both chains of the Andes, and consequently presents great diversity of surface and climate. The high valleys enjoy a temperate climate, although situated immediately under the equator, a consequence of their great elevation. They are extremely fruitful, and would be the most charming places in the world, were it not for the destructive earthquakes and volcanic eruptions with which they are not unfrequently visited. There are sixteen active volcanoes in Quito; and some of the most frightful earthquakes on record have taken place in this country. The valley in which the city of Quito is situated is allowed to be the finest table-land in America, and all travellers speak in glowing terms of its surpassing loveliness. Gold and silver are comprised in the metallic riches of the mountain territory. The republic is divided into eight provinces, the population of which is estimated at 680,000, more than the half of whom are Indians, who dwell in the mountains. The capital of the country is Quito, one of the largest and finest cities in the new world. It stands at an elevation of 9000 feet above the ocean level, but being nearly under the equator, has a bland and genial climate. Quito has two universities, and it has always enjoyed celebrity for the great number of students by which they are attended. The population is estimated at 75,000. The great port of this republic, and indeed of the whole three republics formerly constituting Colombia, is Guayaquil—the exports and imports from which respectively average about £250,000 annually. The imports consist chiefly of British manufactures, flour, wine, and other necessaries; the exports of cocoa, timber, and the various other vegetable products of the country. With regard to the income and expenditure, little correct information is to be obtained. By the treaty regarding the national debt, £1,464,795 fell to the lot of the republic of Ecuador.

PERU.

Ever since the declaration of independence, Peru has been a scene of political squabbling and change, into the details of which we need not enter. At present, the republican state known as Peru is bounded on the north by Ecuador, on the east by Brazil, on the south by Bolivia, and on the west by the Pacific Ocean. Its length is computed at 1500 miles, but its coast-line cannot be less than 2100, reckoning the bendings of the shore. According to Humboldt's estimate, Peru comprises an area of 480,000 square miles. The surface of this vast territory is of the boldest and most varied description. It is naturally divided into three regions—Western Peru, situated to the west of the Andes; Eastern Peru, situated to the east of that mountain chain; and Peru of the Andes, which comprises the mountainous districts. Western Peru is a belt or zone of sand nearly 2000 miles in length, and having an average breadth of thirty or forty miles. No rain falls throughout the whole of this desolate Sahara of the west, and vegetation only springs up on the banks of the rivers which run from the Andes to the Pacific. The habitable parts of Western Peru, therefore, are merely a series of oases 'islanded amid the waste of sand,' like those of Africa. Yet here are situated the city of Lima and several other large towns, the only seaports of the republic. Peru of the Andes, as might be inferred from its varied elevation above the level of the sea, presents a great diversity of soil, climate, and vegetation. Suffice it to say, that in different parts it exhibits every species of production, from the dwarf plants of Lapland which clothe the lofty mountain tops, to the aromatic species of Sumatra, which shed their odours at its base. This portion of Peru contains the sources of those vast rivers which traverse the whole continent of South America, and are the greatest on the face of the globe. But by far the largest, most beautiful, and most valuable part of the Peruvian territory lies to the east of the Andes, commencing on the eastern declivity of the second chain, and stretching to the confines of Brazil. In this vast region a thousand sources of wealth lie buried, for the greater part of it may be said to be yet unknown, although the riches which it contains are immense. In fertility, luxuriance, and variety of vegetation it rivals Brazil, and the world does not present us with any higher standard of comparison. Every sort of production which springs from the ground may be raised in one part of Peru or another in the amplest abundance. Its mineral treasures are gold, silver, platina, tin, copper, lead, quicksilver, precious stones, salt, alum, saltpetre, coal, sulphur, and others. The most valuable of these are in great plenty.

Peru carries on considerable trade with Great Britain, the United States, France, the kindred republics of South America, and other places. A treaty of amity, commerce, and navigation with Great Britain

was signed at Lima on the 5th of June 1837, by which perpetual freedom of trade was established with the countries of the Peruvio-Bolivian confederation. The chief articles of export are gold and silver, Peruvian bark, hides, nitre, sugar (unrefined), cotton, and sheepa' wool, tin, molasses, pot and pearl ashes, &c. The imports into Peru from Great Britain, chiefly of manufactured goods, amounted in 1846 to £820,535; and the exports, chiefly to Britain and the United States, to more than £1,600,000. The present revenue of Peru has been estimated at £1,250,000; the expenditure at a little less than that sum; and the national debt at £6,000,000. But precise information on these points is not to be obtained. The religion of the republic is the Roman Catholic, no other being tolerated. Slavery has been long abolished here; but the state of the country in regard to education and morals is still very low. The total population of Peru is estimated at 1,500,000, consisting of three original castes —Spaniards, Indians, and Negroes, and all their possible combinations. Lima, the capital, which was formerly the grand entrepôt for the trade of all the west coast of South America, contains a population of 70,000. All the trade is carried on at Callao, which, although six miles distant, is the port of Lima. The next most important place is Cuzco, the chief town of the interior, and the ancient capital of the incas. Here are some magnificent remains of the former riches and splendour of Peru, particularly a Temple of the Sun, the wealth of which, when first spoiled by the Spaniards, was almost incalculable. The remembrance of the ancient heathen worship is still preserved by a honorary institution called the 'Order of the Sun.' Besides Lima and Cuzco, the next largest town is the maritime port of Arequipa, which has been six times destroyed by eruptions from a neighbouring mountain, and yet possessed a population of 40,000 previous to the revolution. Earthquakes are frequent in Peru. The city of Lima has been three times almost entirely destroyed by these frightful visitations —namely, in 1687, 1746, and 1828.

BOLIVIA.

After independence was established in 1825, this portion of the ancient viceroyalty of Buenos Ayres received the name which it now bears, conferred in honour of the liberator, General Bolivar. It is bounded on the north by Peru and Brazil, on the east by Brazil, on the south by the Buenos Ayrean provinces and Chili, and on the west by the Pacific Ocean and Peru. It comprehends a space of 480,000 square miles, and the population is estimated at 1,400,000, of whom probably two-thirds are Indians. This republic includes the departments of Potosi, Chuquisaca, La Paz, Santa Cruz, Cochabamba, and Oruro. The greater part of Bolivia is situated at a very high elevation, but towards the east it stretches down in extensive plains towards Brazil. The climate, therefore, is extremely various. On the high parts, snow-storms and hurricanes frequently prevail, and the plains, from the rigour of the weather, are nearly destitute of vegetation. The climate of Potosi, at an average elevation of 13,400 feet, is so changeable, that it frequently exhibits in one day all the vicissitudes of the four seasons of the year. Thence descending through the regions of Oruro, at an elevation of 12,400 feet, La Paz at 12,100, Chuquisaca at 9300, Cochabamba at 8400, down to the plains of Majos and Chiquitos, all the known degrees of temperature, from extreme cold to extreme heat, are experienced. This elevated region is enriched with the most valuable mines of gold and silver, which, with other precious metals, form the only articles of Bolivian commerce. The mountain of Illimani in La Paz, which is supposed to contain rich veins of gold ore, is 24,200 feet above the level of the sea. From the great difficulty of working the mines, and the expense of extracting the ore, the greater part of the gold of Bolivia is obtained from the *lavaderos*, or gold washings in the beds of rivulets, where it is found in the shape of grains. Silver, however, is the great staple metallic production of Bolivia; and the famous mountain of Potosi is ranked next in importance to the mines of Guanaxuata in Mexico.

On account of the inconsiderable nature of the rivers flowing from Bolivia to the Pacific, and the badness of the roads, it is impossible this country can enjoy much commerce with the Pacific; but towards the east, several large streams communicate with the great navigable rivers that flow into the Atlantic Ocean. The river Paro, or Beni, which rises near La Paz, and the Guapey, which rises near Cochabamba, after a long sweep, unite with the Mamori, and, flowing to the north-east, mingle with the waters of the Maranon or Amazon. The Pilcomayo, again, which rises near Potosi and Chuquisaca, and the Vermejo, which rises in the valley of Tareja, flow to the south-east, and mingle with the Paraguay, the upper part of the mighty Rio de la Plata. All these rivers are navigable almost to their source, and, with steam navigation, would open up a direct communication between these wealthy districts and the nations of Europe. The table-land of Titicaca is the most elevated on the globe, with the exception of that of Thibet; but while the latter only presents pastures and flocks of sheep, the former exhibits towns and populous cities, and is covered with fine crops of wheat, barley, rye, &c.

CHILI.

Chili is bounded on the north by La Plata, on the east and south by Patagonia, from which it is separated by the Andes, and on the west by the Pacific Ocean, along the shores of which it stretches from 21° to 43° of south latitude. It is 1300 miles long, and from 30 to 120 broad. The ground ascends gradually from the ocean to the Andes, but is intersected by their projecting branches, some of which run almost down to the sea-shore. There is no deficiency of rivers in Chili, but in general they are small, and running from the Cordillera to the Pacific, they have necessarily short courses. These streams are indispensable to the existence of agriculture, in a country where it rains very seldom, and to a very limited extent. The fertility of the soil of Chili has in many respects been much overrated. It presents great diversities. In some parts where irrigation is deficient, it is barren and unproductive; in others quite the reverse; and amid splendid woodlands, the finest crops of wheat, barley, rye, and other species of grain are raised, with scarcely any trouble to the cultivator beyond scattering the seed. Cotton, sugar-cane, vines, &c. are also extensively cultivated. The country is perfectly free of all noxious reptiles, the climate salubrious, and the weather serene. The want of navigable rivers is unfavourable to commerce; and although there are many rich mines of gold, silver, and copper in the northern provinces, the sterility of the country around them prevents many of them from being worked to advantage.

In 1827, the directorship of Chili was changed into a presidency, in imitation of the United States. The established religion is the Roman Catholic, the priesthood not being numerous, as was the case prior to the revolution. The constitution of Chili is that of a federal republic, consisting of three states—namely, Coquimbo, Santiago, and Conception, and one district, Chiloe, each having a provincial assembly, and all four a common congress, or executive power, which holds its sittings at Santiago. Chili is divided into eight provinces, which contain a population of about 1,180,000. The principal towns are Santiago, with 65,675 inhabitants; Valparaiso, with 26,000; and Conception, with 10,500. In 1840, the outlay of the state was reckoned at 2,000,000 dollars, the receipts being about 400,000 dollars more, which served to pay the interest of the English loan, or at all events a part of it; for their affairs are in great confusion, and their debts are so mixed up with those of Peru, that it is difficult to determine how they stand. By allowing the interest of their loan to remain for years unpaid, the debt has accumulated in such a manner as to have destroyed

national credit. The perpetual broils with Peru have materially contributed to retard the advancement of this country, which has certainly very considerable resources, and an enterprising and intelligent population. During the year 1860, there was exported from Chili gold, silver, and copper to the amount of 3,500,000 dollars. The other chief articles of export are hides, timber, wheat, flour, fruits, Peruvian bark, indigo, tin, and seal-skins. The imports into Chili from Great Britain, chiefly of manufactured goods, amounted in 1846 to £959,522. The native manufactures of Chili are insignificant. Valparaiso is the great port of Chili into which all foreign goods enter—between 400 and 500 vessels there annually discharging their cargoes.

LA PLATA.

The united provinces of La Plata, or the Argentine Republic, comprises the whole of that vast space extending from the cordillera of Chili and Peru to Brazil, with the exception of Paraguay and the Banda Oriental, which are independent states. It comprises an area of 890,000 square miles, and is divided into thirteen provinces, which to a certain extent govern themselves independently of each other, but for all general or national purposes are confederated by conventional agreements. For want of a more defined national executive, the provincial government of Buenos Ayres is temporarily charged with carrying on the business of the union with foreign powers, and with the management of all matters appertaining to the republic in common. The executive power of that government, as constituted in 1821, is vested in the governor or captain-general, as he is styled, aided by a council of ministers appointed by himself, responsible to the junta, or legislative assembly of the province by which he is elected. The junta itself consists of forty-four deputies, one-half of whom are annually renewed by popular election. It was at first attempted to establish a system of federalism, by which Buenos Ayres should exercise immediate control over the other provinces; but from various causes the plan proved quite abortive. The national organisation of this state is now limited to the slender bonds of voluntary confederation, not only with each other, but with the old metropolis, Buenos Ayres. The whole territory is an almost uniformly level plain of great fertility, watered by the large rivers La Plata, Parana, Paraguay, and Uruguay, and several others of smaller dimensions; the Salado, Pilcomayo, Vermejo, and Nuevo, being the most important. There are likewise a number of lakes, the waters of which are brackish. There are almost no natural trees in the province, but there are numerous plantations, or rather orchards, of peach-trees, which the natives cultivate for firewood—the fruit being applied to feeding the swine and poultry. Deer are plentiful in the wilder parts, but little prized where there is so much fine beef. The climate is extremely salubrious, and, singularly enough, is almost entirely governed by the winds, which, generally speaking, are northerly.

One of the distinguishing characteristics of La Plata are the vast plains called *pampas*, one portion of which extends from the banks of the Paraguay westward to the frontiers of Los Charcas, and northward to the mountains of Chiquitos—another immense plain, 300 miles in length from east to west, and 1500 miles from north to south, as far as Patagonia. These plains present one uniform expanse of waving grass, uninterrupted by either wood or eminence, although in some places parched and barren, and perfectly uninhabited, unless by innumerable herds of wild oxen, horses, ostriches, and other animals. Over these pampas lies the only route by land from Buenos Ayres to Chili, which journey was formerly performed by large companies, as the plains were infested by hordes of roving Indians, who went there to hunt, catch wild horses, and plunder. From the absence of all permanent landmarks, the travellers over these immense plains shaped their course by the compass, and their caravans were in reality moveable houses, solid and defensible. Of late years, regular post-houses have been established along the whole line of road betwixt Santiago (the capital of Chili) and Buenos Ayres—a distance of nearly 1400 miles—and a regular communication is kept up betwixt the two republics by means of couriers, who perform their journeys with uncommon speed.

The city of Buenos Ayres is situated on the southern margin of the river Plata, where the latter is formed by the confluence of the Parana, Uruguay, and Negro rivers. It is thus, as it were, the key to all the internal navigation. The city occupies a large extent of ground, being about 2 miles long, and 1½ broad, all the streets crossing at right angles. There are a university, several educational establishments, and a number of churches. The prosperity of Buenos Ayres and the other provinces is greatly impeded by the defective navigation of the river Plata, which is filled with shoals and sandbanks, and therefore dangerous to large vessels; otherwise the city of Buenos Ayres would become one of the largest emporiums of commerce in the world. The Parana and Uruguay are navigable for vessels of from 200 to 300 tons 1500 miles into the interior; the former running through Paraguay into the centre of Bolivia.

The estimated population of the provinces of La Plata is 1,700,000, inclusive of independent Indians within the territory laid claim to by the republic. Of this number of inhabitants, from 180,000 to 200,000 were reckoned as belonging to Buenos Ayres. Into details of trade we cannot enter; indeed it is impossible to obtain correct information regarding the interior provinces, their commerce being mostly of a domestic or internal nature. Buenos Ayres is of course the great centre of foreign trade. In 1845, the imports from Great Britain amounted to £392,279; the total imports into the republic being valued at 7,000,000 dollars. The exports during the same year amounted to 6,100,000 dollars, consisting chiefly of ox hides, gold and silver, sheeps' wool, jerked beef, horse hair, tallow, sheep-skins, and other products of the country. Of late years, the imports into Buenos Ayres have decreased, in consequence of internal feuds and revolutions, whilst those of Monte Video have increased.

PARAGUAY.

The republic of Paraguay, formerly one of the united provinces of the viceroyalty of Buenos Ayres, is situated between the rivers Parana (on the east and south) and Paraguay (on the west). It is divided by a desert tract from Brazil on the north. It comprises an area of about 80,000 square miles, with a population of about 240,000, seven-tenths of which are Creoles. The climate is mild and healthy, although moist, being low and level. All sorts of tropical fruits, corn, vines, sugar-cane, rice, maize, tobacco, indigo, and a number of valuable medicinal plants, abound in profusion. There is a particular plant peculiar to Paraguay called *yerba*, and when decocted, *mattè*, which greatly resembles the tea of China, and is by many preferred to the latter. It is universally used in South America. Of late years it has been cultivated in Brazil with great success. Immense herds of cattle roam over the plains, whose hides and tallow form an article of commerce.

From shortly after the declaration of independence in 1811, until 1838, this beautiful and prolific region was governed in a despotic manner by Doctor Francia, a man of considerable talent, but it is believed partly crazed in mind, who had the address, like Cromwell, to dissolve the temporary government established by the revolutionary party, and to appoint himself sole and perpetual dictator of the state. All things were now managed by him; he planned roads, bridges, and other public works, organized the army, and interfered in the most minute arrangements. His rule was supported by excessive cruelty, and he lived in constant fear of assassination. This extraordinary despot died, in his eighty-second year, in 1838; but what has been the political condition of the state since we have not heard. Some writers are disposed to think that upon the whole Francia's dictatorship was beneficial for the country,

as he carried on various objects of utility, and procured respect and tranquillity for his people.

URUGUAY, OR BANDA ORIENTAL.

This comparatively small state, which occasioned a long and bloody contention between the united provinces and the Brazilian government, is situated between the river Uruguay and the Atlantic from south to north, and between the rivers Plata and Parana from east to west, occupying an area of about 68,000 square miles. From its position, between the Spanish and Portuguese settlements, it soon became an object of contention; but it would be a waste of time to follow the course of the struggle. Suffice it to say, that after much blood had been shed on both sides, in a war of more than half a century's duration, during which the disputed territory, by being the common battle-field, was devastated by both, the contending parties at last drew stakes, and it was erected into an independent state in 1829. It is equally distinguished for fertility of soil, salubrity of climate, natural beauty, and geographical position. It abounds in excellent pastures, which are fertilised by an unusually large number of streams, in which respect it is greatly superior to the rival provinces on the opposite banks of the Rio de la Plata. The city of Monte Video, the capital of the republic, is situated on the northern bank of the great river just named, near its mouth, 120 miles north-east from Buenos Ayres. The importance of this city has greatly increased since the erection of the country into an independent republic. A lowering of the duties on import trade, whilst those of Buenos Ayres remained high, brought foreign goods to it, so that it has in some measure supplanted its rival, and become an entrepôt for the supply of the neighbouring provinces. This is the cause of the diminution in the amount of imports into Buenos Ayres, to which allusion has already been made. In 1836, the importations of foreign goods into Monte Video amounted to £659,530, whilst the exports were nearly equal in value, and now constitute an important proportion of the returns in the general account of the trade with the river Plata. The population of the Banda Oriental is estimated at from 90,000 to 100,000, and is rapidly increasing.

BRAZIL.

Brazil is by far the largest and most important state in the New World. The climate is more generally salubrious and agreeable than that of any other tropical country, and every part of the soil is rich, fertile, and exuberant of vegetation. It is bounded on the land side by Banda Oriental, Paraguay, Bolivia, Peru, Colombia, and Guiana; and on the east and north-east by the Atlantic. The territory within these limits has been estimated at 3,192,000 square miles; the population, inclusive of Indians, at 4,800,000.

Brazil was governed in much the same way as the Spanish colonies until the year 1808, when King Joam VI. fled from Portugal to escape the power of Bonaparte, who had taken a fancy to his dominions. He was warmly received by the Brazilians; nor was their joy misplaced, for he immediately set about freeing the territory from all the marks of colonial dependence. The press was made free, newspapers established, and the ports thrown open to traders of every nation, and everything done to promote education and industry. In 1815 also Brazil was created an independent state, although annexed to the crown of Portugal. In 1817, some democratic insurrections broke out in Pernambuco; and although suppressed, discontent still continued, until, in 1821, it was announced that the Portuguese constitution was to be conferred on Brazil. Before this, however, King Joam had sailed for Portugal, promising at his departure increased pay to all his officers and soldiers. But when he was gone, it was found he had carried off every farthing that was in the treasury, having also raised immense sums by means of treasury bills. The public indignation at this discovery, together with the suspicion that he intended again to reduce Brazil to the condition of a viceroyalty, occasioned a general call for his son Don Pedro, who had been left as regent, to become the head of the government as an independent state. This he readily complied with. In 1822 he was proclaimed emperor, and in 1825 his title and the independence of Brazil were acknowledged by his father. In 1831, owing to his unpopular and despotic measures, Pedro was compelled to abdicate in favour of his son Pedro II., under whom Brazil enjoys the name, but unfortunately not the peace and security of a constitutional government.

The form of government is that of a constitutional and representative monarchy, the imperial crown being hereditary in the male line. Four political powers are recognised—the legislative, which resides in a general assembly, consisting of a senate appointed by the emperor, and a chamber of deputies elected by the people; the executive, the managing, and the judicial, are the other three powers. In 1835, it was decreed that a legislative provincial assembly should be introduced into each of the nineteen provinces, the duration of each session to be two years. The local powers of these bodies are very considerable, approaching to those of the individual states of the North American Union. The religion of the state is the Roman Catholic, but the exercise of all others is permitted, though none are allowed to build churches or perform divine service in public. There are a great number of monasteries and nunneries in Brazil, and the clergy is numerous. Much has been done for public instruction in Brazil, a national system of education having been introduced. The press is free, but as yet there are few printing establishments in the country. Nothing is wanting but internal tranquillity to enable the Brazilians to make advances in literature and the useful arts.

To describe minutely the physical characteristics of so vast a region as that of Brazil, would carry us far beyond our limits. Generally speaking, there is not on the globe a finer country, one blessed with a more genial climate, or a more fertile soil; more happily diversified with wood and water, or with abundance of navigable rivers; or more famed for its produce of gold and diamonds. Nearly the whole of the most highly-valued productions of the earth are raised within its territory. The land rises by gentle gradations from the shore to the interior, to the height of from 3000 to 6000 feet above the level of the sea. At this elevation within the tropics the climate is temperate, and European fruits and grains are raised in abundance. The intervening valleys have a warmer temperature, and consequently are extremely favourable to the growth of sugar, coffee, cotton, and every description of tropical produce. Magnificent forests overspread a great part of the interior. The trees are closely interwoven with brushwood and shrubs, and covered with creeping plants adorned with the most resplendent flowers, thus imparting a peculiar and rich appearance to the scenery. These forests abound in valuable woods, adapted for every purpose to which art can apply them. The climate in the neighbourhood of the Amazon, and in the northern parts, is hot, but ameliorated by the humidity of the atmosphere; in the southern regions it is temperate, and in general healthy.

Brazil is rich in mineral treasures, especially in gold and diamonds. Gold is found in the beds of most of the rivers that rise in the interior, and almost all the towns were founded by men searching for gold. Next to gold, diamonds form the staple of Brazilian mineral riches. They were first accidentally discovered about 1730. There are several large mines of nitre and iron, but no silver is found. Salt is extremely abundant, but being a government monopoly, it is always kept very high in price; a most absurd regulation in a country where it is so much required, not only for the use of man, but of cattle, poultry, sheep, and other animals, and for salting meat. The commerce of Brazil is very extensive, especially with Great Britain. Though labouring under the curse of being a slave-holding state—a condition of things incompatible with sound insti-

tutions—Brazil is yearly improving in circumstances, and exhibits very satisfactory symptoms of commercial prosperity. All that it requires, exteriorly, is liberty to trade on equitable terms with Great Britain, where its vast produce of coffee and sugar would find a market. At present it raises 60,000 tons of coffee annually, and this could be greatly increased. Brazil is well known as being the best South American customer of Britain, particularly for cotton goods. At present its imports from the United Kingdom amount to about £4,000,000 annually, and between 50,000 and 60,000 tons of British shipping are engaged in the trade, chiefly in connection with Liverpool. The imports into Brazil from the United States during the year 1855 amounted to 2,608,656 dollars, being chiefly flour; from France, to the extent of £907,350. The whole imports into Brazil may be estimated at £6,500,000. The exports, consisting of sugar, cotton, hides, coffee, tobacco, rice, leather, drugs, dye-woods, India-rubber, gold, diamonds, are estimated at £5,500,000, of which about £1,500,000 comes to Great Britain. According to the report of the finance minister, the income for the year 1858 was 13,663,289 dollars, the expenditure 13,622,000 dollars, leaving a balance of 41,289 dollars. There is a yearly increasing debt of above £6,600,000.

The capital city of Brazil is Rio Janeiro, of which the population is estimated at nearly 200,000. The harbour is one of the finest in the world. The entrance to it is a narrow opening in a ledge of rocks, about half a mile wide, at the mouth of which is an island, upon which a strong fort is erected. After passing through this strait, the mariner finds himself in a magnificent gulf 100 miles in compass, encircled by lofty mountains, and enclosing a number of islands. Vessels of all dimensions may enter and anchor in perfect security. The city is on the north-east side of the bay; the streets in one part are narrow, and the whole appearance of the lower city is somewhat mean. It is, however, now greatly improved, by the erection of public and private buildings. The greatest portion of the mercantile inhabitants are Portuguese. One of the most striking features of Rio is the immense number of churches with which it is provided. Bahia, or St Salvador, the ancient capital, is situated on the east side of the magnificent bay of All-Saints, which extends a whole degree from north to west, branching inland in every direction, and capable of holding all the shipping in the world. The population is estimated at 120,000, so that it is the second city in Brazil. From its central situation, the commerce is very extensive. Pernambuco is the next city in size and importance, and is increasing so rapidly, that new houses are built wherever space can be found, while the commerce is increasing in proportion. It is perhaps the handsomest city in Brazil, with broad paved streets, fine houses, an Episcopal palace, handsome churches, convents, hospitals, theatre, &c. The population is estimated at upwards of 62,000.

GUIANA.

This territory is divided into British, Dutch, and French Guiana. It is situated north of Brazil, between Cape North and Essequibo, inclusive. The portion claimed by Britain extends from the river Coventyn, in 56° 58′, to Punta Barima, at the southern outlet of the Orinoco, in 60° 6′ west longitude, in breadth, and from the Acaria mountains to the sea, in length. It formerly consisted of the settlements of Demerara, Essequibo, and Berbice, but these are now united under one government, and include 67,000 square miles. The whole coast is flat, and on approaching from the sea, nothing is visible but the tops of the trees, which seem to be growing out of the water. This alluvial flat extends from ten to forty miles inland, and is terminated by a range of sand-hills, which approach within two miles of the sea, on the south side of the Essequibo. Parallel with these sand-hills run several detached groups of hillocks, of moderate elevation. Farther into the interior the country is much diversified with mountains and valleys. Immense savannas, or plains, occupying 14,400 square miles, extend between the rivers Demerara and Coventyn, approaching the sea at the river Berbice. These plains appear to have been an inland lake, and are sandy, growing only a few stunted trees; but they are very rich in pasturage. Guiana has three great rivers—the Essequibo, the Berbice, and the Demerara. The Essequibo, the largest of these rivers, is about 620 miles in length, but, from the number of rapids, it is only navigable for 50 miles from its mouth. During its course, it receives the waters of several large tributaries, which irrigate an immense tract of country. To the eastward, and running parallel to the Essequibo, is the Demerara, which is navigable for vessels of small size about 85 miles above Georgetown. The Berbice, although smaller than the Essequibo, is of more importance, from its course being free for vessels drawing twelve feet water about 105 miles, and for vessels of seven feet draught 165 miles into the interior of the country. The river Coventyn forms the boundary between the British and Dutch possessions, and is navigable 150 miles for vessels drawing seven feet of water. There are also several smaller streams in the intervals between these great rivers, which, although of no importance for navigation, are extremely useful in the irrigation of the country. This fertility is kept up during the dry season by heavy falls of dew; and this takes place not only on the banks of the rivers, but also in the open plains. The soil is very fertile, in some parts sandy, but growing abundance of grass, and in others it is a strong retentive loam, well adapted for the cultivation of coffee, sugar, rice, and other kinds of tropical produce. The coast is covered with mangrove and curina bushes; and towards the interior thick forests occur, which yield many valuable kinds of timber, drugs, and dye-stuffs.

British Guiana is divided into three counties, Demerara, Essequibo, and Berbice. The two former have been united, and are divided into eleven parishes, and the latter into six. These colonies were first settled by the Dutch, captured by the British in 1796, given up to the Batavian Republic in 1802, retaken in 1803, and finally ceded to this country at the general peace of 1814. The settlements are all situated upon the banks of the rivers from which they receive their name, extending along both sides, and generally as far inland as the rivers are navigable. Each plantation has a wharf or landing-place of its own, and canals are cut into the land for the admission of boats, and the draining of the surrounding country. For 50 miles along the sea-coast of the county of Berbice, a huge embankment has been raised against the sea, on which is a carriage-road 60 feet broad. A comparatively small portion of Guiana is yet cultivated, and an immense field for colonial industry still lies open. The extent of cultivated land, however, is gradually increasing as the advantages of the colony are becoming known. The staple products consist of sugar, rum, coffee, and cotton; and it is thought, from the fertility of the soil, and the constant summer which prevails, that many other valuable plants might be cultivated. The climate is very genial and regular throughout the year, the maximum heat being 90°, the minimum 74°, and the mean temperature about 82°. Two wet and two dry seasons constitute the changes of the year; the great wet season, as it is called, commencing in the middle, and continuing till the end of August, and the great dry season from the end of August till the end of November. The short wet season occurs from December to the middle of February, and the short dry season from February to April. The foregoing applies to the coast regions, the interior being marked by only two great changes during the year.

The population of Guiana may be divided into Europeans, Africans, people of colour from other parts, and native Americans. The native Americans have dwindled down to a very small number, who lead a wandering life on the frontiers and savannas of the colony. The government is vested in a governor and court of policy,

consisting of the governor, chief-justice, attorney-general, collector of customs, government secretary, and an equal number of persons elected from amongst the colonists. Formerly, all free male inhabitants were liable to serve in a military capacity, but since the abolition of slavery the militia has been disbanded. The local government have made the greatest efforts to promote education in the colony, and many schools and churches have been erected at considerable expense.

The capital of British Guiana is Georgetown, situated on the western bank of the river Demerara, which has a population of from 20,000 to 25,000. The streets are generally wide, traversed by canals; the houses built of wood, two storeys high, and separated from each other by gardens and ditches. It is built in two rows, about a mile long, on the river side, and contains several handsome buildings. New Amsterdam, the chief town in the county of Berbice, extends about a mile and a-half along the western bank of the river Berbice. The houses have all gardens behind, and are separated from each other by canals or trenches, and the town is described as presenting altogether a very pleasing aspect on entering the river. The population of this town, according to the last-published census, amounted to between 3000 and 3500.

The exports from Guiana, as is the case with all the other West India colonies, have decreased of late years; but from the encouragement which is now given to emigrants, it is hoped that this will in the course of time be remedied. The exports, consisting chiefly of sugar, molasses, rum, coffee, and cotton, amount from £1,500,000 to £2,000,000; and the imports, chiefly of British manufactures, to little short of £1,000,000.

The settlement of Cayenne, or *French Guiana*, was first formed about 1630 by a colony from Caen in Normandy, after which it is called. It did not succeed. From that period down to the peace of 1814, it passed alternately into the hands of the Dutch, British, Portuguese, and French, but was then finally restored to France. There are two settlements, one on the mainland, another on the island of the same name, separated from the former by the river Cayenne, making in all an area of about 27,000 square miles. The mainland is low and marshy, and the Indians in the surrounding territories are so troublesome, that the settlers attend to little else than the rearing of cattle. It is on the island that all the articles of merchandise are raised, consisting of coffee, sugar, cotton, cocoa, indigo, Cayenne pepper, &c. The island is 18 miles long, and 10 broad. At the north point is the town of Cayenne, the capital of the colony, with a fine convenient harbour, and containing about 200 houses. The population of the whole colony does not exceed 22,000; and altogether it is a settlement of very little importance.

Dutch Guiana, until 1814, comprehended Surinam, Berbice, Demerara, and Essequibo; the three last were then transferred to Britain. The remaining province of Surinam is about 210 miles long along the coast, and has an area of about 36,000 square miles. The soil is low, rich, and fertile, and produces sugar, rum, cotton, and coffee, for exportation. In 1842 the population was estimated at 78,000, four-fifths of whom are slaves, free Indians, and Maroons. Paramaribo is the capital, situated on the river of that name, with a population of from 16,000 to 20,000.

PATAGONIA.

This region is of great extent, occupying the whole southern portion of South America, beyond about the 40th parallel of south latitude. Its length, including Cape Horn, is above 1000 miles; but its breadth at the widest is not much more than one-third of that space, and it gradually narrows to a point at the southern extremity, where the land bends in a curve to the south. The interior of this large territory is but little known; but the more that is ascertained of it, the less does it appear likely ever to become the seat of a thriving people. Terra del Fuego is divided into three islands by two channels, and is altogether a dreary region, inhabited by a few miserable savages.

FALKLAND ISLANDS.

This insular group, situated in the Southern Ocean, about 300 miles north-east of Cape Horn, consists of two large islands, east and west Falkland, containing upwards of 180,000 square miles, and of ninety islets of various dimensions. The group was discovered by Davis in 1592; and small settlements made at different times on the larger islands by the English, French, and Spaniards were successively abandoned, till in 1833 (when the southern whale-fishery, and the trade to America, rendered the islands of more importance) they were formally taken possession of by Britain. They now constitute a British colony or dependency, under the direction of a governor and council. The only settlement is Port Louis, on the eastern island; the principal production of the colony is cattle; but the surrounding seas abound with excellent fish, seals, and sea elephants. In 1842, the value of the exports exceeded L.1000, and the imports L.400.

WEST INDIA ISLANDS.

This important archipelago extends from lat. 10° to 28° north, and from long. 59° 30′ to 85° west, studding that large indentation of the Atlantic Ocean which lies between North and South America. As a whole, the islands are separated from the former continent by the Straits of Florida, and from the latter by the Gulf of Paria; thus having the Caribbean Sea, the Bay of Honduras, and the Gulf of Mexico, on the south and west, and the Atlantic on the north and east. They are commonly divided into the following groups:—The *Bahamas*, consisting of 14 principal islands, and upwards of 600 rocky islets or cays; the *Greater Antilles*, comprising Cuba, Haiti, Jamaica, and Puerto Rico, with their subordinate islets; the *Caribbean*, including the Virgin, Leeward, and Windward clusters; and the *Lesser Antilles*, lying along the coast of South America. The aggregate area is estimated at 93,000 square miles.

SUPERFICIAL FEATURES—PRODUCTS.

The general aspect of the West Indian archipelago is mountainous; and following their curving sweep from the peninsula of Florida southwards, they appear to belong to one great axis of elevation. Many of the islands exhibit manifest proofs of volcanic origin; and they are all less or more subject to violent shocks of earthquakes. In the larger islands the craters seem to be extinct; but in St Lucia, Martinique, Guadaloupe, Montserrat, &c. several of them have thrown out smoke and ashes since the middle of the last century. As might be expected, various degrees of elevation are exhibited in the great chain: thus in Cuba the highest point is 9000 feet; in Haiti 8500; Jamaica 7150; Dominica 6000; Guadaloupe 5500; and in St Lucia 4000. Numerous streams descend from these mountains; and though they do not reach the size of rivers, yet serve to water the fine plains and valleys, whose fertility is mainly owing to their influence. Several of the Caribbean islands, however, are of secondary formation, and not much elevated above the sea; while the Bahamas are generally low, with a scanty soil, and interspersed with numerous coral-reefs and shoals. The mineral products are copper in Cuba, sulphur in Guadaloupe, and pitch from Barbadoes and Trinidad.

Lying almost wholly within the tropics, these islands

know no winter; the year, as under similar latitudes, being divided into *wet* and *dry* seasons. Nevertheless, meteorologists distinguish four periods—spring, with gentle showers in April and May; the hot and sultry summer from May till October; the autumnal rains, which then begin and continue till December; and winter, from December till April, consisting of serene and cool weather. During the rains, the climate is in several of the islands decidedly unhealthy; but throughout the dry season, nothing can exceed the softness of the air, the brilliancy of the heavens, and the luxuriance and splendour of the vegetation. Between August and the end of October most of the islands are subject to furious hurricanes; these, however, are luckily not very frequent, and are unknown except during this short period.

'The rich and varied productions of the West Indies give them an important place in the commercial world. To their valuable native plants, art and industry have added others not less valuable. The sugar-cane, yielding its threefold tribute of sugar, molasses, and rum; the coffee-plant, pimento or all-spice; the plantain and the banana; the pine-apple, anana, yam, sweet potato, maize, cassava, manioc; with cacao, tobacco, and cotton; various dye-woods and stuffs, as fustic, logwood, indigo; medicinal plants, as liquorice, arrowroot, ginger, jalap, ipecacuanha; building and cabinet timber, as mahogany, lignumvitæ, and cedar; to which list must be added the bread-fruit, cocoa, mango, papaw, guava, orange, lemon, tamarind, fig, and other tropical fruits. The cattle are generally of diminutive size; only a few of the islands contain sheep and goats; few horses, asses, or mules are reared, and consequently great numbers of these are imported from the continent. Hogs are more abundant than other domestic animals. There are few wild animals, but wild swine, tajassous, monkeys, rats, and some smaller animals. The manati is found in Trinidad and Tobago; the cayman, turtle, and other reptiles are common; and fish are everywhere abundant. Land and sea-crabs are also common; and amongst the more remarkable insects are mosquitoes, cockroaches, scorpions, ants, and the valuable cochineal insect.'

POPULATION—GOVERNMENT.

The native tribes have long since become extinct, except perhaps a few families in Trinidad. At the time of their discovery by Columbus in 1592, the southern islands were inhabited by the fierce and warlike Caribs, and the northern by the Arrowauks, a more mild and gentle race. The latter have been described as indolent and sensual in their habits, but mild and forgiving in disposition, affectionate to their wives, and seem to have been of a domestic turn of character. They were particularly fond of dancing and various other peaceable amusements and games. Their form of government was monarchical, the kings being called *caciques*, and their power hereditary. Subordinate chiefs or princes governed each district, who were tributary to the king. They had likewise an established priesthood; but their religion consisted of the usual savage superstition. They, however, believed in the existence of a Deity, and a future state of rewards and punishments. At present, the great mass of the population is of African origin—the remainder consisting of Spaniards, French, English, Dutch, and Danes—who have carried with them their religion, laws, manners, and industry. Reckoning the gross population, which is said to be decreasing, at 3,000,000, about 1,900,000 may be reckoned as Negroes,* 630,000 whites, 470,000 Creoles and other admixtures. The following table exhibits the names, areas, and population of the principal islands, with the governing powers to which they belong:—

Islands.	Sq. Miles.	Pop.	Chief Towns.
British—			
Anegada,	30		
Anguilla,	60	3,000	
Antigua,	108	35,412	St Johns.
Bahamas,	5,440	18,580	Nassau.
Barbadoes,	164	122,000	Bridgetown.
Barbuda,	72	400	
Crab,	40		
Cayman,	60		
Culebra,	12		
Dominica,	275	18,330	Charlottstown.
Grenada, &c.	150	27,000	St George.
Jamaica,	6,250	348,244	Spanishtown.
Montserrat,	47	7,660	Plymouth.
Nevis,	29	8,000	Charlestown.
Roatan,	28		
St Kitt's,	68	25,272	Basseterre.
St Lucia,	275	18,150	Castries.
St Vincent,	121	27,120	Kingstown.
Tobago,	120	14,000	Scarborough.
Tortola,	20	6,960	
Trinidad,	2,000	60,000	Port of Spain.
Virgin Gorda,	15		
Spanish—			
Cuba,	43,280	704,487	Havana.
Puerto Rico,	3,865	49,096	San Juan.
French—			
Désirade,	16		
Guadaloupe,	334	127,640	Point à Pitre.
Mariegalante,	60		
Les Saintes,	5		
Martinique,	290	116,030	Fort Royal.
St Martin, N. Part,	15	3,660	
Dutch—			
Curaçoa,	375	12,000	Willemstadt.
St Eustatius,	10	13,500	St Eustatius.
Saba,	20	4,500	
St Martin, S. Part,	10	3,300	
Danish—			
Santa Cruz,	80	34,000	Christianstadt.
St John,	70	3,000	
St Thomas,	50	7,000	St Thomas.
Swedish—			
St Bartholomew,	25	15,000	Gustavia.
Independent—			
Haiti,	29,400	600,000	Port-au-Prince.

BRITISH POSSESSIONS.

The forms of government established in the British colonies in the West Indies may be divided into two classes: those having a governor, council, and representative assembly; and those having only a governor and legislative council. The first includes Jamaica, Barbadoes, Antigua, Tobago, Grenada, St Vincent, Montserrat, Nevis, St Christopher's, Honduras, the Virgin Islands, the Bahamas, and the Bermudas; and the second, Trinidad and St Lucia. The governor has the chief civil and military authority; the council is somewhat analogous to the privy-council in this country, and the House of Assembly to the House of Commons. A member of the House of Assembly in Jamaica must possess a freehold of £300 per annum, or a personal estate of £3000; and an elector must have a freehold of £10 per annum in the parish for which he votes. Some of the islands have only lieutenant-governors, who are under the governor of some adjacent island. The lieutenant-governors of St Vincent, Grenada, Tobago, and Guiana, are under the governor of Barbadoes. Their powers, however, are nearly equal to those of a governor. In those islands which have no representative assembly, the legislative council consists of the chief secretary, the treasurer, the chief-justice, the attorney-general, and the commander of the troops. These are appointed by the crown; and sometimes a few of the principal landed proprietors are made members of the council. Several islands are sometimes included in one government, who send their representatives to the island which is the seat of legislature for the time being. Thus, in the Leeward Islands, St Christopher's, Nevis, Montserrat, and one or two other small islands, send their representatives to Antigua, which is the seat

* Previous to 1834, the British West India islands were all cultivated by Negro slaves; but in that year a bill passed the House of Parliament by which slavery was abolished, the planters receiving £20,000,000 sterling as the price of Negro emancipation. This bill declared, that after the 1st of August 1834, all slaves should become apprenticed labourers; the apprenticeships to cease in August 1840.

of government for them all; or, in other words, the residence of the governor. The superior and inferior courts of judicature resemble those in England, the laws being the same, unless as they may be affected by the special colonial enactments passed from time to time. Assize courts are frequently held to expedite the course of justice. There are likewise parish courts, wherein justices of the peace decide summarily in small-debt cases. There are offices where all deeds, wills, sales, and patents, are recorded. All persons intending to leave the island are obliged to give notice at the office of enrolment three weeks before they can be entitled to a pass, or to find security for what debts they may leave unpaid in the island; and for further precaution, masters of vessels are taken bound, under heavy penalties, not to carry off any person without such pass. The procedure of the Assembly follows as near as may be the formula of the British legislature, and all their bills have the force of laws as soon as the governor's assent is obtained. The power of rejection, however, is vested in the crown, but, *until rejected*, the laws are valid. The governor can also refuse his assent to all such laws, and can dissolve and call together the Assembly at pleasure. With these preliminary observations, we proceed to notice the principal islands :—

Jamaica.

This is the third island in point of size in the western hemisphere, being inferior only to Cuba and St Domingo. It lies about 100 miles south of the former, and about 90 west of the latter. It is 160 miles long, 45 broad, and contains about 4,000,000 acres of land. This island was discovered by Columbus during his second voyage, and was well populated at that period. The natives opposed his landing at first, but he soon effected a reconciliation with them, and took possession of the island in the name of his sovereign. In 1509, the island was formally occupied by Spanish settlers under the command of a deputy-governor; but for many years they were engaged in incessant warfare with the natives. The settlers committed great atrocities on the Indians, whom they at last completely extirpated, not a single native being left alive when the English took possession of the island in 1655, nor, it is said, for a century before. During the period the Spaniards held possession of Jamaica, they appear to have made some advancement in agriculture; but their rapacity for gold, which they were constantly in search of, prevented any great improvement in this department. They, however, cultivated the sugar-cane, the vine, and the cotton-tree, and introduced cattle from Europe. Cromwell greatly encouraged the settlement of Jamaica; and in the course of a few years, the number of whites amounted to 4500, and 1400 Negroes. The population rapidly increased, the settlers being principally soldiers from the disbanded Parliamentary army, and outlaws from the mother country. Numerous importations of Negro slaves also took place, which in 1688 were calculated to amount to 10,000 annually; and from that time till now the population in most of the islands has gradually increased.

Jamaica has been subjected to several dreadful earthquakes; one of which, in 1692, caused almost the entire loss of the town of Port Royal. This town was also reduced to ruins by fire in 1703; and a similar catastrophe took place so recently as 1815. It was also much injured in 1722 by one of those dreadful hurricanes so frequent in tropical climes. The white inhabitants have been repeatedly in danger from the revolts of their slaves, which were the occasions of much bloodshed and cruelty on both sides. The slaves are said to have been at first instigated to rebellion by the Spaniards; but being defeated by their English masters, they fled to the mountains, assumed the name of Maroons, and continued for nearly a century and a-half in constant hostility with the colonists. The most remarkable rebellion broke out in 1795, and which has been known since by the name of the Maroon War. No other event occurred to disturb the peace of Jamaica until 1831, when an extensive revolt took place from the exaggerated hopes of the Negroes for emancipation. It is remarkable, that during this revolt, although much property was destroyed, no personal violence was offered to any white person, beyond a few hours' captivity. Since the passing of the Emancipation Act, no disturbances of any importance have taken place.

Jamaica is of an oval shape, and presents a greater variety of scenery and climate than any other island in the West Indies. A range of mountains called the Blue Mountains, runs from one end to the other, and rises in some parts to the height of nearly 8000 feet above the level of the sea. These are again occasionally intersected by cross ridges running north and south. At the south end, near the sea, these mountains are in some parts covered with forests, high and abrupt in appearance, and difficult of access. On the other side the hills rise with a gentle acclivity, and are separated from each other by vales, the vegetation of which is described as extremely luxuriant and beautiful. The mountains are generally of a conical form, very steep, and approaching on the north side very near to the sea. The deep ravines between the lofty mountains are densely covered with woods, and are denominated 'cockpits.' These offer a striking contrast to the lower mountains, where the coffee-plant, pimento, cotton, &c. are cultivated. On the south side, the mountains are situated a little distance from the sea, leaving plains of about twelve miles wide.

There are numerous rivers in Jamaica, two hundred of which have been enumerated; but none, owing to the irregular nature of the country, are navigable for vessels of any burthen. They are extremely valuable, however, in the cultivation of the soil; the great height from which the water runs allowing it to be carried a considerable length in irrigating the country, and turning mills upon plantations. The rapidity of the current also prevents it from stagnating; and thus it is kept pure for animals to drink from its source to the ocean. There are sixteen principal harbours, which afford secure havens for shipping, and about thirty bays or roads with good anchorage.

The soil of the country is generally deep and fertile, presenting a shining appearance to the eye when first turned up. In some parts it is of a chocolate colour; in others a bright yellow, and even scarlet. The best soil for cultivation is what is termed the brick-mould, which is of great depth, so rich as to require no manure, and of a quality which seems well suited for the climate. It is so far retentive, that in dry weather it retains enough of moisture for the preservation of the plants, and so porous as to admit of the superfluous water sinking through it during heavy rains. This soil is composed of clay, sand, and black mould, and is thought the best soil in the island for the cultivation of the sugar-cane. The next soil in point of fertility is the black shell-mould; and there are many varieties throughout the island all more or less fitted for cultivation. A rich lead ore is found in some parts of the country, which is impregnated with silver. This ore is worked at Liguana; and varieties of copper, striated antimony, and ironstone, have also been obtained.

Jamaica is divided into three counties—Middlesex, Surrey, and Cornwall. The seat of government is Spanishtown, in the county of Middlesex, situated at the extremity of an extensive plain. The mountains closely approach the town, and the river Cobre runs past it, at a distance of about a quarter of a mile. The town is not large, but the buildings are very magnificent, being built in the style of Spanish architecture. Kingston is the most important town in the island, and is generally considered as the capital, although not nominally so. It is situated upon a gentle inclined plain, which is enclosed on the north by the Liguana ridge of mountains. These mountains form a sort of semicircle, and the plain stretches down to the harbour, which is amongst the finest in the world. It affords excellent anchorage all round, and the largest merchant ships can ride close in shore. This harbour is

defended by numerous batteries, and is considered perfectly unassailable from the sea. The streets of Kingston are built with the greatest regularity, somewhat in the style of the New Town of Edinburgh. The houses are principally of wood, and in general two storeys high, with verandas above and below. The town contains about 40,000 inhabitants, of whom 12,000 are whites, and the rest people of colour. Montego Bay, situated on the opposite side of the island from Kingston, is a seaport of some importance. It lies at the foot of a range of mountains which nearly surround the town, and possesses a neat church and commodious barracks. Falmouth is situated about fifteen miles east of Montego, and is rising rapidly to importance. The harbour in the inside is deep and well sheltered, but the entrance is intricate, and not more than 17 feet deep across the bar. The town is built on the west side of the harbour, and possesses several good public buildings. There is more produce shipped from this port than from any other in the island after Kingston.

Trinidad.

This island, the next in importance to Jamaica of the British West India possessions, is favourably situated at the mouths of the large river Orinoco; being separated from the continent of South America by the Gulf of Paria. It is 90 miles long and 50 broad, with an area of 2400 square miles. It was discovered by Columbus in 1498, and was colonised by the Spaniards in 1588, at which time it was well populated with Caribbs, who were of a mild disposition and industrious habits. The native inhabitants, however, were soon either destroyed or sent to the continent of America to work in the mines by the Spaniards. The island belonged to Spain until 1797, when it was taken by the British, and has ever since remained a colony of this country.

Along the south and north sides of this island run two ridges of mountains, extending nearly across the country, and along the north shore, giving it the appearance at a distance of being nothing but an immense line of rocks. The western side for some distance is flat, richly wooded, and is described as presenting a most beautiful appearance. The high mountains of Cumana on the American continent are visible from this side; and when viewed from a height, with the Gulf of Paria, and the beautiful verdure of the island, present a picture which is scarcely to be equalled. The centre is diversified with many finely-wooded hills, and valleys of the greatest fertility. The highest land lies on the north side, and in some parts reaches 3000 feet in height. The other mountains are not of any great elevation, but they are all thickly covered with wood and pasture. There are numerous rivers in this island, several of which are navigable for ships of some size. The best harbour in the island is that of Port Royal, after which Port-of-Spain, which has the most extensive bay in the world; and all around the west coast there are numerous bays, which afford good anchorage for shipping. Several craters exist in Trinidad, some of which give occasional indications of not being quite extinct. Mud volcanoes also occur, the largest of which is 150 feet in diameter. The mud never overflows, but remains always within the surface of the crater; and when one crater ceases to act, another appears in its vicinity. The celebrated pitch lake is situated on a small peninsula, about eighty feet above the level of the sea. The pitch has usually the appearance of pit coal, but is gray in colour, and somewhat hard, except in very hot weather, when it becomes liquid to a small depth. The lake is about a mile and a-half in circumference, with several small islands covered with trees, and the country around is wooded to its banks. The soil of Trinidad, generally speaking, is good; the only barren parts being the sandy plains, and these occasionally afford pasturage for cattle. The sugar-cane, coffee, and cocoa are cultivated to a considerable extent, and the produce is increasing very rapidly. Several spices have also been introduced, such as the nutmeg, cinnamon, and clove.

The capital of the island is Port-of-Spain, which is said to be one of the finest towns in the West Indies. The streets are wide, and intersect each other so as to catch every breeze. The houses are all built of stone, none being allowed to be erected of wood. There are also numerous other ports around the island, which are gradually rising in importance.

Tobago.

This island is about 32 miles long and 12 broad, and is the most southerly of the West India Islands. It is about six miles distant from Trinidad, at the east end, and about sixty miles from Grenada. Tobago was discovered by Columbus in 1496; and in 1580 it was taken possession of by the English. It was afterwards settled by some Dutch colonists; and after many takings and retakings, it was ceded to Britain at the peace of 1763. In 1781 Tobago was captured by the French, but was retaken in 1793 by the British, with whom it has ever since remained. Its appearance from the north is gloomy and mountainous, being principally composed of conical hills and ridges, which in some parts reach the height of 1800 feet. The north-west is the least mountainous, and the south is diversified with occasional hills and rich valleys. There are a number of small streams, which, rising in the hills, water the low country down to the sea. The natural harbours in this island are numerous, and several of them adapted for ships of the largest class. The chief town is Scarborough, situated on the south-west side. It is built without much regard to regularity, and is about half a mile from Fort King George, the principal military station. The soil is rich, and the produce as varied as that of any of the other islands.

Grenada and its Dependencies.

This beautiful island is situated about sixty miles from the American coast; is 25 miles long, and 12 at its greatest breadth, and contains 80,000 acres of land. It was discovered by Columbus in 1498, but was not settled till 1650, when a party of French from Martinique took possession of it. It was taken from the French by the British in 1762; again retaken, but finally ceded to Britain in 1783. The face of the country is hilly, irregular, and extremely picturesque. There are a number of rivers, none of which are of any great importance for commercial purposes, but all useful for irrigating the country. Several hot springs exist; and a fresh-water lake, 2½ miles in circumference, is situated at an elevation of 1740 feet above the level of the sea. The capital is the town of St George, situated within an amphitheatre of hills. The houses are well built, of stone or brick, and the streets wide and well ventilated. The harbour is spacious, protected on all sides from hurricanes, and is said to be capable of containing 1000 ships. Cotton was formerly the chief article produced on this island, but sugar, cocoa, and coffee are now also cultivated.

The Grenadines are a group of small islands running towards St Vincent, the largest of which are Carriacou, Becquia, Canuan, &c. Several of these islands are inhabited, and produce sugar, cotton, fruits, live-stock, &c. in great abundance.

St Vincent and its Dependencies.

This is thought the most beautiful of the Caribbean islands. It is about 24 miles long and 20 broad; fifty-five miles west of Barbadoes, and about the same distance from Grenada. It was discovered by Columbus in 1498; was first settled by the French; captured by the British, and retaken; but finally ceded to this country in 1783. Its character is decidedly volcanic, traces of rocks which have undergone the action of fire being everywhere visible. The mountains are high and sharp at the top, running from north to south, with deep valleys between. The soil is of a strong loam in the valleys, but assumes a more sandy nature on the hilly ground. In 1812, St Vincent was visited by a severe volcanic eruption, the matter from which nearly

covered the whole surface of the island. The damage done to the island was not great, but fifty persons lost their lives on the occasion. The island is divided into five parishes, of which the principal is St George, in which the capital, Kingston, is situated. The houses of the town are built of stone in the lower storeys and wood in the upper; and there are many commodious public buildings, but none of them of any great elegance. There is a famous botanic garden about one mile from Kingston, occupying about thirty acres of ground, and containing a fine collection of tropical plants. The most celebrated object in this island is the Souffriere, a volcano, the crater of which is 3 miles in circumference and 500 feet in depth. The climate is thought very healthy; but hurricanes are frequent, and sometimes very destructive. There are eight small islands adjoining to St Vincent, which are cultivated; but they are not of such importance as to warrant particular mention.

Barbadoes.

This is the most easterly of the Caribbean islands, and was the first settlement made by the British in the West Indies. It is about 22 miles in length and 14 in breadth, containing an area of 106,470 acres. The period of the discovery of this island is unknown, the first mention made of it being in 1600. It was colonised by the British in 1625, Charles I. having made a grant of it to the Earl of Carlisle, who encouraged emigration to the island. A society of London merchants accepted of 10,000 acres on certain conditions, and sent out a governor of their own. After this the settlers increased very rapidly: and in 1650, it was computed that there were upwards of 20,000 British in the island. During the Commonwealth, an armament was fitted out by Cromwell against Barbadoes, for adhering to the royal cause, which committed great depredations against the inhabitants; and since this time the population has rather decreased. The island is generally level, except in the north-east quarter, and here, in some parts, the hills reach the height of 1100 feet. It has a beautiful appearance, from the land being well cultivated and the vegetation luxuriant. The soil is good, varying from a rich deep mould to a light sand, and a red clay of considerable depth is occasionally found. There are a number of springs in the island, one of which casts up a bituminous matter called Barbadoes tar, and another emits a stream of sulphuretted hydrogen gas, which can be ignited. Oxen, horses, and other cattle are plentiful, the first being most generally used for labour. Considerable numbers of hogs and poultry are reared; and, indeed, this island is distinguished from most of the West India colonies by the quantity of provisions which are raised, the inhabitants depending little upon foreign supplies.

Bridgetown, the capital, is situated on the shores of Carlisle Bay, and contains about 20,000 houses. The town is well laid out, many of the houses are very handsome, and spacious barracks occupy the southern extremity. The climate is considered healthy, but would feel extremely hot were it not for the constant trade-winds. The island is subject to hurricanes, one of which in 1780 laid waste its whole extent. The loss of lives on this melancholy occasion was estimated at 3000, and property valued at upwards of £1,000,000 was destroyed. Barbadoes seems to have reached the height of its prosperity at the end of the seventeenth century, and since that time the population has decreased.

St Lucia.

This island is about 32 miles long and 12 broad. The English were the first who made a settlement in St Lucia, but the colonists were completely destroyed by the natives. It was again settled, and since that time has passed repeatedly from the British to the French, until 1803, when it was captured by the British, in whose possession it has ever since remained. This island is traversed longitudinally, or from north to south, by a ridge of lofty mountains, which terminate in most fantastic peaks. These mountains are densely wooded, and at times, from the attraction of the trees, are completely enveloped in clouds. On the west coast there is an excellent harbour called the 'Little Carcenage,' which, admitting only one ship at a time, is capable of containing thirty ships of the line. The island is divided into Basseterre, the low or leeward country, which is the best cultivated district, and Capisterre, the high country. Both of these districts are considered unhealthy; the first from the abundance of stagnant water, and the other from the denseness of the woods. As cultivation proceeds, however, these causes will be removed, and the island rendered as healthy as any in its neighbourhood. The capital is Castries, which is the only town in the island, and a place of no importance. There is a small island called Pigeon Island about six miles from St Lucia, which is considered a healthy and important military station.

Dominica.

This island is situated between the French colonies of Martinique and Guadaloupe, and is about 29 miles in length and 16 in breadth, containing nearly 186,436 acres. It was considered a neutral island until 1759, when it was taken possession of by the British, with whom, after being repeatedly taken and retaken, the island still remains. Dominica is of volcanic origin, and has many lofty mountains, the highest of which is 5314 feet above the sea's level. Several of these mountains contain active volcanoes, which frequently discharge vast quantities of burning sulphur; and there are many hot-water springs throughout the island. The valleys are fertile, well watered with thirty fine rivers and numerous smaller streams. The trees are lofty, affording the finest timber, such as locust-wood, rose-wood, mastic, iron-wood, cinnamon, bastard mahogany, and a gum-tree of considerable value. Domestic animals are very abundant throughout the island; and indeed all European animals succeed extremely well in this place. In the woods are innumerable swarms of bees, which lodge in the trees, produce large quantities of both wax and honey, and are said to be identical with the European bee. The capital is Charlottetown, situated in the parish of St George. The streets are spacious, well paved, and from the heights above the town look new and clean. The roadstead is open to the hurricanes, which frequently occur from August to October, but otherwise safe. Prince Rupert's Bay is the safest harbour in the island, and is said to be capable of containing the whole British navy.

Montserrat.

This is one of the smallest of the British West India Islands, being only about 12 miles long and 7½ broad. It was discovered by Columbus, first settled by the English, and taken once by the French; but has ever since remained a colony of this country. Montserrat appears to be of volcanic origin, and presents a very uneven and mountainous surface. It is extremely difficult of access from the broken character of the land, and the coral beds and rocks which stud the sea around the southern part of it. The mountains are in many places inaccessible, and seem to have been separated from each other by some strong convulsion, from their banks being so precipitous. Both mountains and valleys are covered with wood; and many fine streams water the low lands. The capital is Plymouth, a small but well-built town, the houses of which are constructed of stone, and exceedingly comfortable. Indigo was formerly much cultivated in this island, but this article has been abandoned; and the principal productions now are cotton and sugar, the latter of which is much esteemed. This island has been called the Montpelier of the West Indies, from the healthy nature of the climate, although occasionally subject to hurricanes.

Antigua.

This island, which was discovered by Columbus in 1493, is about 20 miles long, 54 in circumference, and contains an area of 69,277 acres. It was first settled

in 1632 by the English, but its progress was slow at first, in consequence of the want of water. Antigua is somewhat oval in shape, indented with many bays, and surrounded with small islands, rocks, and shoals, which render it difficult of access. The face of the country in the north-east part is low, and even marshy, but it gradually rises towards the south and west. None of the hills are of any great elevation, the highest being little more than 1200 feet above the sea's level. The island being almost destitute of water, the colonists are obliged to have tanks to collect the rain which falls during the wet season. The land, however, is very fertile, and vegetation in every part luxuriant. Tobacco was formerly much cultivated, but the sugar-cane has entirely superseded this commodity; and there are several medicinal plants produced on the island, such as the aloe, quassia, &c. The capital, St John's, is situated on the north-west, and possesses an excellent harbour. Englishtown, on the south, is the next town which has a fine harbour, with a royal naval-yard, arsenal, and conveniences for careening ships. The whole coast is indented with bays, which, although difficult of access, afford excellent shelter to shipping. The climate is dry and healthy; and the island is not subjected to either heavy dews or severe hurricanes, like most of the other islands. Antigua is ruled by a governor, who is also commander-in-chief over Montserrat, Barbuda, Anguilla, St Christopher's, Nevis, the Virgin Islands, and Dominica; with a legislative council and House of Assembly. Antigua was the first island to ameliorate the slave laws, by affording the accused the benefit of trial by jury; and an act of Assembly, 18th February 1834, decreed the emancipation of every slave without requiring the period of apprenticeship prescribed by parliament.

St Christopher's or St Kitt's.

This island, situated in latitude 17° 18′ and longitude 62° 40′, is 72 miles in circumference, and contains 68 square miles. It was discovered by Columbus, who is said to have given it his own name; and it was first settled by an Englishman of the name of Warner, and fourteen associates. Warner found several Frenchmen already on the island; and these two parties, after making war upon the natives, divided the island between them—one part, called Capisterre, or high country, being assigned to the French; and the other part, called Basseterre, or low country, given to the English. Many bloody battles were fought between these two parties until 1713, when the whole island was ceded to Britain. St Christopher's is of an irregular oblong shape, divided from north to south by a ridge of mountains; and the whole land of the island is somewhat elevated, sloping gradually from the centre to the sea. The greatest height is Mount Misery, which rises 3711 feet, almost perpendicularly, and is clothed with vegetation nearly to the summit. There is no plain in the island which can be called swampy, the gradual fall of the ground carrying off any superfluous moisture from the earth. The vale of Basseterre is described as extremely beautiful, the ground being very rich, and everywhere highly cultivated. The soil is chiefly of a dark-gray loam, lying upon a bed of ashes, very porous, and is considered the finest soil for the cultivation of the sugar-cane in the West Indies. There is said to be a sulphur mine in one of the mountains of the centre, and another of silver; but it does not appear that these have ever been worked. The island is watered by four rivers, none of them of any size; and there are numerous springs in the low lands. These, however, from strong saline impregnations, are not fit for drinking, and the inhabitants have to collect rain water in tanks for domestic purposes. The capital is Basseterre, which is the best shipping station.

Nevis.

This beautiful little island, consisting only of a single mountain, which rises like a cone out of the sea, green, unbroken, and verdant to the summit, was discovered by Columbus at the same time with St Christopher's, from which it is separated by a channel about 2 miles broad. It was first taken possession of by a party of English from St Christopher's; and the population is said to have rapidly increased. The mountain of which Nevis is composed is about 4 miles in length and 3 in breadth; its area being about 20 square miles. The hill is well cultivated; and at the height where cultivation ceases, evergreen forest-trees grow luxuriantly, the whole island having a cheerful picturesque aspect. The capital is Charlestown, which is described as a neat well-built town, with several handsome public edifices.

Barbuda and Anguilla.

These two islands, although far separated, may properly be classed together, from the similarity of their scenery and the occupations of the inhabitants. Barbuda is situated about twenty miles north-east of St Christopher's, and ten north of Antigua. It is about 20 miles long and 12 broad. The first notice made of Barbuda is in the time of Queen Anne, when it was given in perpetual grant to General Codrington and his descendants, by whom the greater portion of it is still possessed. Anguilla, or Snake Island, is about 100 miles north of Barbuda, and the same distance north-north-west of St Christopher's. It is 30 miles long and 3 broad, and receives its name (signifying an *eel*) from the peculiarly winding shape it presents. These islands were both first settled by the British; and although subject to occasional attacks from other powers, they have always remained in the possession of this country. The interior aspect of these two islands is quite different from that of any of our other West Indian settlements, being in many respects indeed quite *English*. The sole occupation of the inhabitants is rearing stock, and cultivating provisions, for which a ready market is found in the neighbouring islands.

Virgin Islands.

This name was given by the discoverer Columbus (in 1493) to a group of about forty small islands, lying to the northward of the Leeward Caribbean Islands, and between them and Puerto (or Porto) Rico. They extend about 24 leagues from east to west, and about 16 from north to south. They are divided between the British, Danes, and Spaniards, but much the larger and more valuable number belong to the former. The British Virgin Islands were first possessed by a party of Dutch buccaneers, who built a fort on Tortola, but they were expelled soon after by a party of English. They have remained in the possession of this country ever since. The largest of these islands is Anegada, the next Tortola; and although never considered of any great importance, they afforded excellent shelter to shipping during the late war. Tortola is mountainous, the interior containing large tracts of waste land difficult of access. The soil is thin, and not well-suited to the cultivation of the sugar-cane, although this and cotton are the chief articles of produce. The harbour of Tortola is very extensive, completely landlocked, and has afforded shelter in many cases during the war to 400 vessels. Anegada, although the largest island in extent, is of little importance, only a very small portion of it being under cultivation. It is surrounded by a reef which renders it difficult of access, and the other islands being so near, it is little frequented. Virgin Gorda is of an irregular shape, and contains two good bays, where ships may ride in security. The soil is of a light sandy nature, and the chief articles of produce are sugar, indigo, tobacco, and cotton. These islands are subject to the government of St Kitt's, with a council and assembly of their own.

The Bahamas or Lucayos Islands.

These are the most northerly of all the West Indian islands, stretching towards the coast of Florida, and forming with it the channel called the Strait of Florida. They were the first land discovered by Columbus in

1492, and amount in number to fully 500. The island which gives the name to the whole is the most northern, as well as the most important of the group. A settlement was established by the British in 1629, which was ravaged by the French and Spaniards several times, and the group of islands became a nest for pirates, until the beginning of the last century, when they were expelled by the British. The Bahamas are evidently of coral formation, and although flat, they have a very pleasing aspect, from the richness of the vegetation. The chief island is New Providence, which contains the capital Nassau. These islands are very healthy, and from their situation the climate is delightful, being of a medium temperature. The chief article produced for exportation is cotton, neither sugar nor coffee having succeeded. Provisions of all sorts are very plentiful, cattle and sheep thrive well, and the shores abound with fish and turtle.

Bermudas, or Somers' Islands.

These are a small cluster of islands, lying almost in the shape of a shepherd's crook, in latitude 32° 20′, and longitude 64° 50′, distant about 600 miles from the nearest point of the American continent. Their discovery was owing to the shipwreck of Juan de Bermudez, a Spaniard, who was driven ashore upon these islands while on a voyage from Spain to Cuba. The same fate happened to Sir George Somers, an Englishman, in 1609, who was the first to colonise the Bermudas. They are upwards of 300 in number, contain about 14,000 acres of land, and are so much alike in character, that to describe one is to describe the whole. The principal islands are St George, Ireland, St David, Somerset, Long and Birds' Islands, &c. These lie close together, in such a way as to form capacious bays, which afford good anchorage when once got into. The coast, however, is of the most dangerous description, being thickly studded with rocks, which are visible at low water, and disappear at flood tide. The chief articles of produce consist of arrowroot, coffee, cotton, and indigo. The soil is very fertile, and produces many kinds of vegetables fit for food; and medicinal plants, such as the aloe, jalap, &c. grow spontaneously. The whale is an annual visitor to the coast, the catching of which forms a lucrative employment to the inhabitants. Bermudas possesses no fresh-water streams, and only a few wells, the water of which is brackish; but there are a great many tanks which fill during the rainy season, and supply the inhabitants. The climate is not considered healthy, the yellow fever being of frequent occurrence. The Bermudas have never been considered of great importance to this country; but they are likely to become more so in consequence of their being formed into a penal settlement.

Notwithstanding their richness and fertility, the favours conferred by the mother country, and the exertions of British industry and capital, our West Indian possessions are at present far from being in a prosperous condition either as regards produce or trade. In 1831 the exports amounted to £8,000,000, and in 1841 to less than £6,000,000. In 1831 about 4,000,000 cwts. of sugar were exported; in 1841 scarcely 2,000,000. In 1831 the exports of rum exceeded 7,000,000 gallons; in 1841 less than 3,000,000. In 1831 there were upwards of 20,000,000 lbs. of coffee exported; in 1841 less than 10,000,000. The imports from Britain alone in 1842 amounted to £2,591,425; in 1843 to £2,382,441; in 1844 to £2,451,477; in 1845 to £2,789,211; and in 1846 to £2,505,587: thus exhibiting no increased capability on the part of the population to purchase those luxuries and necessaries which they do not and cannot manufacture for themselves. This unsatisfactory state of matters some attribute to emancipation and the difficulty of procuring cheap and efficient labour; but others, who take a more English and business view of the subject, are inclined to impute the whole to absenteeism and expensive living on the part of the planters, who are thus compelled in most instances to mortgage their estates on disadvantageous terms, and ultimately to submit to a ruinously-expensive system of management by law agents, factors, and the like, instead of personally superintending and combatting with the difficulties attendant upon the introduction of free labour in an economical and skilful manner. Be this as it may, what with military and civil expenses, what with buying from these planters under high protective duties—to say nothing of trouble and obstruction to home affairs—we are annually losing by our West India connection several millions per annum.

FOREIGN POSSESSIONS.

French.

The French possessions in the West Indies comprise the islands of Martinique, Guadaloupe, Marie Galante, and Désirade. Martinique is situated at the entrance to the Gulf of Mexico, and is about 50 miles long and 20 broad, and 140 miles in circumference. It is of volcanic origin; romantic in appearance; and the mountains are covered with almost impenetrable woods. Martinique is well watered; and the soil is good, although it varies much on account of the volcanic eruptions, which have in some places covered the surface of the land. About two-fifths of the whole island are cultivated; the rest being occupied with mountains, forests, and plains, which latter yield good herbage for cattle. Port Royal, the capital, is situated on one of the several bays which indent the coast, and possesses the safest and most capacious harbour in the West Indies: population about 7000. The chief commercial town is St Pierre, which is described as exceedingly neat: population 30,000.

Guadaloupe is situated in lat. 16° 20′ north, and long. 62° west. It is divided through the centre by a small channel, which is navigable for vessels of fifty tons, and forms, as it were, two islands. The eastern division, called Grandeterre, is 14 leagues long, and 6 broad; and the western, Basseterre, is 15 leagues long and 14 broad. There are several volcanic mountains in Guadaloupe, one of which still emits smoke, and sometimes sparks of fire. The island is well watered, and diversified with hills and valleys. The soil is good, and yields abundance of fruits and grain. The chief productions are sugar—which, although the cane reaches a great height, is not good—and coffee, which is also of an inferior description. The capital is Point à Pitre, which possesses a spacious port. Basseterre is also a considerable town, with many fine buildings.

Désirade and Marie Galante are small islands, situated near Guadaloupe, and subject to its government. The former is famous for its cotton, and the latter yields chiefly sugar and coffee. These islands, along with Guadaloupe, contain about 335,000 English acres, with a mixed population of 120,000 inhabitants.

Spanish.

A few years ago the colonial possessions of Spain extended from the frontiers of the United States almost to Cape Horn. Now, she has not a foot of land on the American continent; and of the islands, is possessed of only two worth mentioning—Cuba and Porto Rico.

Cuba is by far the largest island in the West Indies, being 700 miles in length and 117 at its greatest breadth. It is traversed throughout its length by chains of mountains, some of which reach the height of 8000 feet above the level of the sea. From these mountains flow numerous streams which water the soil, and render it highly productive of all tropical vegetables. The savannas, or plains, are very extensive, stretching on both sides from the mountains to the sea. The soil of these plains is so fertile, that two, and even three, crops of grain have been cut annually; and during the whole year the fields are covered with plants in blossom. The island is very rich in minerals, particularly copper, iron, and loadstone; and mines of gold and silver have also been worked. Coal-mines have likewise been opened, but it does not appear that they

have been worked to any extent. Cuba was for a long time little cultivated by the Spaniards, being looked upon more as an intermediate station between the mother country and her American possessions, than as a valuable colony. Its position, commanding the entrance to the Gulf of Mexico, gives it great commercial importance; and since the ports were opened to foreigners, the productions and trade of the island have greatly increased. The chief exports are sugar, coffee, and tobacco, which, manufactured into cigars, is in high estimation. The capital is Havana, situated on the north side of the island, and the finest city in the West Indies. It possesses a splendid harbour, which, although narrow at the entrance, is without bar, and, inside, is capable of containing 1000 ships. The other towns in Cuba are Trinidad on the south, Mantanzas on the north, Santiago de Cuba on the east, and Villa del Principe in the heart of the island.

Porto Rico, the only other island belonging to Spain, is situated about twenty-five leagues to the eastward of St Domingo. It is about 90 miles long, 33 in average breadth, and contains 2970 square miles. It is intersected by a chain of lofty mountains, which run through it lengthwise, and possesses table-lands and valleys of great fertility. The island is well watered by rivers, some of which are navigable for two or three leagues from their mouths; and they all abound in excellent fish. The soil on the east and north is rich in pasturage, and numbers of horned cattle are reared by the inhabitants. That on the south side is well adapted for the raising of sugar; but the climate is often very dry, and the land parched. The climate of this island is somewhat peculiar; on the north coast it often rains during the whole year, while on the south coast, an entire want of rain for twelve months is no uncommon phenomenon. The chief productions are sugar, coffee, indigo, rice, and live-stock. The principal towns are Mayagues and Aguadilla.

Dutch.

The Dutch possessions in the West Indies are Curaçoa and St Eustatius, the islet of Saba, and part of St Martin—all in the Caribbean group. The two former are naturally barren. Curaçoa, from its proximity to South America, was formerly a place of great contraband traffic; but since the independence of that continent, it has ceased in a great measure to be an entrepôt. It is 30 miles long and 11 broad, and produces sugar and tobacco. Like some of its sister isles, it is entirely dependent on the rains for a supply of water. It was held by the Spaniards until the year 1632, when it was taken by the Dutch, in whose hands it has since remained.

St Eustatius consists of a single mountain, which is 29 miles in circumference, and cultivated to the very summit. The productions are sugar and tobacco, and the population may be about 15,000. It was first colonised by the Dutch in 1635, and continued for many years a subject of contention between them and the French, by whom it was alternately possessed, until 1781, when it was captured by Admiral Rodney. The booty which fell into the hands of the English on this occasion was estimated at £4,000,000 sterling. It was restored to the Dutch by the peace of 1795; and after being again captured by the English, was finally secured to the Dutch by the peace of 1814.

The small islands of Saba and St Martin are too inconsiderable to require further mention.

Danish.

The Danish settlements, all belonging to the Caribbean group, are three in number—St Croix (or Santa Cruz), St Thomas, and St John, of which the former alone is of any importance. It is about 81 miles square, and contains about 30,000 inhabitants. The soil is fertile and well cultivated, producing sugar, rum, and tobacco. St Thomas is about 6 leagues in circumference, and St John about the same. They are both quite inconsiderable.

Swedish.

The only colony belonging to the Swedish government is the small island of St Bartholomew, about 15 miles in circumference. It has only one town and one harbour—namely, Gustavia and Le Carenage.

INDEPENDENT ISLAND.

St Domingo.

This island, lying between Porto Rico on the east and Jamaica and Cuba on the west, is 390 miles long, and from 60 to 150 miles broad. It was discovered by Columbus, who called it Hispaniola, or Little Spain; but the native inhabitants call it Haiti, or the mountainous land. The French and Spaniards took possession of the island in 1650, dividing it between them. No particular event took place till the period of the French Revolution, when, taking advantage of the contest between the royalists and republicans, the natives and slaves rose in a body, massacred the whites, and established their independence. Christophe, formerly a slave, was elected chief, and governed the island with great wisdom for a number of years. In 1811, he was crowned king, created princes and nobles, and reigned undisputed till 1820, when his jealousy and despotism caused a general revolt, and seeing his affairs desperate, he shot himself. A republic was then established, which was soon extended over the whole island, the Spanish half having also made a successful revolt. The government at present consists of a president, a senate, and chamber of representatives.

The greater part of the coast of St Domingo is rocky and dangerous; but the bays of Samana and Neyba afford secure anchorage for large ships. There are also many ports, situated generally at the mouths of rivers, in which small vessels can anchor with safety. The rivers are numerous, the principal being the Haina, the Nigua, the Neyba, and the Yima, which are navigable for some leagues from their entrance. The country is mountainous, but interspersed with fine plains of great fertility. The mountains intersect the island from east to west, some of them reaching the height of 6000 feet above the level of the sea. On the north-west side is an extensive plain, supposed to be 80 leagues long, and from 10 to 15 broad, which is extremely fertile, being watered by numerous streams. The soil is of the finest description, and is distinguished by the variety of its vegetable productions—such as cabinet and dye-woods, building timber, drugs, cotton, sugar, tobacco, and almost every species of tropical fruits. The French and Spaniards introduced breeds of horned cattle, hogs, sheep, horses, mules, and asses, which have multiplied exceedingly, and are of great value to the inhabitants. Mines of gold, silver, iron, and copper were formerly found, but it does not appear that they are worked to any extent at present.

St Domingo was formerly considered one of the most important islands in the West Indies, and it is evident, from its size and the fertility of the soil, that it might be made so again. The policy of the government, since the independence of the island was declared, has been illiberal; heavy burthens are imposed upon merchants settling in the country; and all foreign merchandise is liable to a duty of 12 per cent. upon entering the country, except French, which pays 6 per cent. Sugar and coffee were formerly exported in very large quantities, but these have now very much decreased. The exportation of wood has increased as that of sugar and coffee have declined, and tobacco is also more extensively cultivated. The population of the island has diminished considerably since the revolution. Port-au-Prince, the capital, is situated in the department of the west, has an excellent roadstead, and is the chief seat of trade. The town is built of wood; the streets are unpaved; and from the marshy nature of the surrounding country, it is very unhealthy in summer. The population is about 15,000. The other towns are Port Haitien, which is the best-built place in the island, Les Cayes, and St Domingo.

THE HUMAN MIND.

The mind of man has in all times ranked among the most important subjects of human knowledge and inquiry. Besides being a wonderfully-framed and highly-complicated piece of work—infinite in faculty and noble in reason, the mirror of the vast universe without—it is the only seat of human feeling and conscious existence, the exclusive dwelling-place of joy or wo.

There are three great distinct sources of knowledge respecting the human mind, and these are also the avenues open to us for controlling its workings:—

I. Outward appearances, actions, and works, and the traces and results of these that are permanently engraved upon the face of external nature. The inner workings of the mind are displayed to some extent in the outward movements of the body, in the features, looks, utterance, gestures, and movements, or in what is called the natural language of man. But the acts and operations directed upon external things are a still more decided class of indications of the character of the mind. The nature of the appetites is shown by what is visibly seized and devoured; the instincts are made known by the actions that each creature is observed to perform on the material within its reach, as the capabilities of a machine are understood from the effects that it can produce; the various passions and emotions may be studied through their various stages by noticing the object that excites them, the agitation and expression of the bodily frame, and the mode of reaction upon the exciting cause. Anger, gratitude, affection, reverence, are all seen under external appearances, and by these they may be distinguished and described, and their causes and effects ascertained. The acquired habits, and the various characteristics of memory, reason, intelligence, belief, conscience, are shown in the same outward way. A child is observed one day attempting to repeat some act that it sees others doing, the next day it has improved in its attempts, and in a short time longer it succeeds in the operation; in which we discern the capacities of observing, imitating, and acquiring new powers that are inherent in human nature. All the processes and works which are performed upon the material of the world are so many signs or pieces of information as to the powers of the human mind acting through the bodily organs. The faculties of digging, house-building, spinning, and of shaping tools to overcome the powers and resistance of the inanimate world, the adaptation of means to ends, and the application of the experience of the past to the guidance of the future, can each be read in clear outward characters, like the rising of the sun, the course of the seasons, or the flow of rivers to the sea. And in consequence of the permanence of many of the products of human labour, the purposes, capabilities, and employments of departed generations may be made apparent to the view. The remains of cities, fortifications, temples, sepulchres, market-places, and highways, are so many indications of the character and pursuits of the men who built and occupied them; and we never hesitate in inferring the one from the other. On the faith of such relics we ascribe taste, imagination, genius, grandeur of design, and laborious perseverance to one people, a low order of inventive power to another, and servility under a despotic government to a third. The creation of the industrial arts, the organisation of armies, the building up of the institutions of civil society, the worship of the supernatural powers, the investigation of nature, the invention of literature and art, are all expressive of what is in man; and they have always been referred to as examples and illustrations of the wants, desires, capacities, and endowments of the race. So that from the whole it must be apparent that the ordinary actions and labours of living beings, the things that are seen to attract, repel, or in anyway influence them, their outward manifestations under every variety of circumstances, the innumerable works that they are observed to engage in, or leave traces of behind them, form an abundant source of the knowledge now under our consideration; in a word, the drama of human life, the transformations effected on the face of the external world, the history of mankind, and the entire aggregate of civilisation, combine to teach us what the mind of man is.

II. The second source of our knowledge of mind is one that has been too much looked upon by metaphysicians as the main source—namely, consciousness, or the immediate feeling of the mind's doings, which is a part of its nature. The works that a man leaves behind him express a sum-total of desires, purposes, and capacities, rather than the detailed current of emotion and thought. In order to reduce the trains of mental working to their smallest individual steps or links, we must attend to our own consciousness. The great results of the human understanding may be seen in the published thoughts, discoveries, and transactions of thinking men; but the ultimate laws that govern its operations cannot easily be traced from these, although, when discovered, they may be confirmed and illustrated by such results. The structure of the imagination could not be so readily derived from the 'Paradise Lost' as from the comparison of that great example with the consciousness that we have of the workings of the faculty in ourselves. Hence we are to regard the impressions left by the mind of its own sensations, thoughts, emotions, actions, and volitions, and capable of being revived and considered like any other impressions, as one of the means of ascertaining the laws and processes and general structure of this part of our nature.

III. The last great source of our knowledge of mind is the anatomy and physiology of the human framework, or everything that can be ascertained respecting the structure of the human system. A certain number of the bodily organs are directly subservient to the operations of the mind, and the mechanism of such organs will therefore be in some measure a clue to these operations. The eye, the ear, the voice, the hand, are all prominently associated with the susceptibilities and activities of the mind; the whole of the movable members of the body, including the limbs, trunk, and features, are employed in the varied play of thought and passion. Moreover, a deeper examination of the bodily frame has shown that the brain, and the innumerable nervous cords and threads issuing from it to every part of the body, are most intimately and indispensably allied with the workings and processes of the mind, and must, for that reason, have their conformation and structure adapted to the precise nature of those workings and processes. Hence every discovery relating to the structure of the brain and nervous system, as well as in the organs of sense and motion, is likely to be of importance in showing the manner of working of the mind that they are expressly formed to serve. This class of fruitful discoveries has of late years been very extensive, and they promise to be of the highest use in unravelling the complicated scheme of human nature. As one striking example, it has been shown by Sir Charles Bell and others that the nerves ramifying from the brain through the body are of two distinct sets or kinds, although both are often joined in the same bundles: and that the nerves of one of the kinds are exclusively employed in carrying impressions from the organs of sense and the different parts of the body inward to the brain, while the nerves

of the other set are as exclusively employed in carrying influences outward from the brain to the moving and other active organs of the system; the ingoing set being commonly termed nerves of sense, the outgoing nerves of motion. An impression of touch on the fingers is carried *to* the brain by one nerve, an influence to put the fingers in motion is carried *from* the brain outward by another nerve; and the same division and distinctness of function are observed everywhere throughout the system. The nervous framework is thus to be regarded as a series of going and returning conveyances between the brain and the different parts of the body; or the mechanical arrangement that has been adopted in connecting the mind with the bodily organs is of a circular kind, like the course of the blood. There is reason to believe that every impression made upon the senses, or anywhere upon the body, and transmitted by the ingoing nerves, has a tendency to excite in the brain an outgoing stimulus to some of the outgoing nerves, which ends in putting in motion some active member of the system. Every act of mind requires not merely a nervous centre, such as some portion of the brain, but a complete circle of brain, nerves, and bodily organs, the round of which is described by the nervous influence at each operation. This must be reckoned the first principle of nervous anatomy in its bearing upon the processes of mind.

The collective recorded experience of mankind, derived from these three leading sources, are the materials bequeathed to us for learning the character and mechanism of the human mind: these materials we have to sift and compare with themselves, and with our own independent observations, until we obtain a rigorous consistency in all our results. Among the indirect helps to the study of mind, in addition to these three great direct sources, are to be reckoned the sciences that treat of the outer world.

REFLEX ACTIONS.

There are certain actions performed by men and animals which are so distinctly seen to arise from an outward stimulus reflected back from a centre in the form of a movement, that they have specially received the name of Reflex Actions. This directness of return, however, is not their distinguishing character, but belongs to many actions not so named. What really distinguishes this class of movements, is their being performed unconsciously, or their not passing through what is properly the mental system of the creature. Their effect is the same as some of the mental actions, but they lie without the boundary of the true mental life. Their exposition is, nevertheless, necessary as a preliminary to the study of the proper mental phenomena. The following are some examples of them:—

1. *The act of sucking in infants*, which may be said to commence before the dawn of mind. The contact of the child's lips with the nipple is an impression of touch conveyed inwards by the nerves of the lips to a ganglion in the spine, and causing a returning influence which contracts the ring of the mouth, so as closely to embrace the nipple. This completes one nervous circle, and makes one distinct act; but it is not the only act. The muscular contraction of the lips must be assumed to yield a second sensation quite different from the first, or from the sensation of contact, and capable of setting in operation a second circle. A nerve will have to convey this second or muscular impression to a separate ganglion, whose outgoing threads proceed to a different quarter—namely, to a group of muscles in the back and breast, whose contraction swells out the chest, exactly as is done in the act of drawing in the breath; or we may imagine that the ganglion in question is made to connect with the nerves that ordinarily sustain the act of inspiration. This act of inspiring air, in the present instance, causes a suction at the mouth on pneumatic principles, the nose being made partially close at the same time, and as part of the same reflex act. The inspiration or suction yields a third sensation, the commencing stimulus of a third circle, which terminates in acting on a new class of muscles. These contract the chest, and force the air through the nose, the impress of which act is the commencement of a repetition of circle second, or of a circle of inspiration and suction; and the two processes of inspiration and expiration thenceforth go on alternately, until they are made to cease by the feeling of satiety. They are, in fact, a reinforcement of the breathing process, coupled with the hold of the nipple by the child's mouth, and the partial stoppage of the nose during the suction. The action is at first purely of the reflex or unconscious kind; but, at a subsequent stage of growth, it is liable to come under the notice and control of the mind. 2. *The act of Swallowing.*—After a morsel of food has been chewed under the influence of a conscious operation, it passes to the back-part of the tongue, and into the bag-like cavity of the pharynx; and by contact with the surface of this cavity, it excites a movement of muscular contraction which forces it down the gullet, and it is carried along the tube of the œsophagus to the stomach. The sensation of contact in each place of the alimentary canal excites a contraction of that place which forces the food to the next; and by a series of reflex actions, it is conveyed through its whole course. 3. The *winking of the eyes* is another reflex action, quite independent of our consciousness. Many of the motions of the lower animals are also reflex, and are to be distinguished from the instincts belonging to these animals, which run through the mental life or consciousness. The motions of insects are in a great measure reflex, the rythmical regulation of them being the only part that is under the cerebral or mental system. Decapitated flies execute movements of their legs, but of an irregular kind, unlike the rythmical and orderly motions that enable them to walk.

In our exposition of the proper phenomena of mind, we shall adopt the following divisions of the subject:—

I. The SENSATIONS, APPETITES, and INSTINCTS, which form an allied group, and make up a region of mind in so far complete in itself.

II. The INTELLECT.

III. The EMOTIONS.

IV. The ACTIVITIES; meaning such as are of a higher order than the Appetites and Instincts treated of in the first division, and which connect themselves with the Intellect and Emotions.

SENSATIONS, APPETITES, AND INSTINCTS.

The region of Mind proper is defined or circumscribed by the peculiarity expressed by the term Consciousness, which is an ultimate fact that may be described and distinguished from other facts of body or mind, but which cannot be resolved into anything else. Its leading property is as follows:—

It is the unity, the consolidation, or the centralisation of the operations of mind. Under it all the threads of mental ongoings and movements are reduced to one complex thread, whose course is indivisible. The reflex actions may go on apart and simultaneously, but all that are brought within the sphere of consciousness are rendered mutually dependent, and reduced to act only by turns. The unity of the conscious thread is clenched by the fact, that a large portion of the muscular apparatus of the body is subservient to the operations of the mind; and as no part can be used in two ways at the same instant, it becomes often a matter of necessity that these operations should take their turn instead of acting simultaneously. There being but one great executive apparatus for the consolidated circles of the mind, there can be as it were but one stream of execution, or of movements requiring the use of such apparatus. But the union of many circles in one great conscious circle has the farther effect of making each dependent on all the rest; anything that one is excited to do may be arrested if a stimulus of an opposite tendency happens to have been conveyed to any other

circle. In the sphere of the organized mind, or of consciousness, there is a free communication between the separate centres, which permits of harmony or conflict, mutual assistance or mutual resistance. If a certain motion is given to the arms, and if a motion is also given to the eyes, and if the two are in harmony, the coincidence is felt within the system, and the one sensibly ministers to the support of the other; but if there be any incompatibility, a conflict arises, and one must succumb: such harmonies or conflicts are among the class of feelings resulting from the consolidation of the mind into one thread of conscious operations. The more highly a creature is organized, the more perfect is this union of all the operations of the system into a central train of operations, which enables conflicts to be suppressed at once, and tends to cause the various processes of life to go on in perfect harmony. The sense of vivid mental existence depends on this great peculiarity of united action in one organized train. The fact of consciousness, and the fact of the mutual connection and common understanding of all the more important operations of the system, go together, if they are not one and the same fact. In fine, consciousness is mental existence. The various circles may be going their rounds of operations; but if they impart no feeling, the mind is not awake; the circles are disconnected, and reduced to the mere reflex character. In the state of unconsciousness, any one circle is unable to agitate the whole frame to sympathise with or assist its movements; and in this case the pains and pleasures caused by it are for the time suspended. Such a state as this is exemplified in sleep.

The arrangement we have now described answers to what may be called General Consciousness, as distinct from certain kinds of special consciousness, such as that named reflex attention to one's self, self-consciousness, and the like. The difference is the same as between *seeing* and *looking*, or between the general vision of a wide range of objects and the special or concentrated observation of some single object.

The three groups of *Sensations*, and Sensational *Appetites* and *Instincts*, make the inferior region of the true or conscious mind. They occupy a very prominent, not to say the predominant part of the mental life of the great mass of the inferior animals, and are a very considerable portion of the far more complicated thread of human consciousness. Of the three classes, the *Sensations* are the primary phenomena, and form the starting-point of the other two: an appetite or an instinct must in all cases be preceded or accompanied by a sensation. We shall therefore commence with the Sensations.

SENSATIONS AND ORGANS OF SENSE.

With regard to Sensations in general, it is particularly of importance that we should keep in view the fact, that a complete nervous circle is always described, commencing with an impression on a sensitive surface, and ending for the most part in a muscular action. The overlooking of this great and fundamental property of the nervous system has rendered nearly everything that has been said on the subject of Sensation radically incomplete. A Sensation, when allowed free scope, never fails to go through the entire round already detailed, although, from its being subordinated to the general stream of mind, the latter part of the circle, or the returning stimulus, may be forcibly arrested, or suspended, or turned into another direction; but nevertheless the phenomenon essentially includes the whole course of the completed circle. In describing each class of sensations, we must not merely point out the sensitive surface and the objects acting upon it, but also the returning impulse peculiar to the class, and the muscles or other organs that are concerned in this responsive movement. In so doing, we shall gradually become acquainted with one leading function of the muscular apparatus of the body—namely, its being used to complete the circles of the senses, and to move to and fro the parts of the body where the sensitive surfaces are lodged, in obedience to the ganglionic stimulus awakened by the impressions of external objects on those surfaces. In general, we may say that an act of Sensation supposes, *1st*, A certain object, or influence acting upon the body either from without or within; *2d*, A sensitive surface adapted to receive such impressions; *3d*, A nerve whose termination ramifies in the sensitive surface, and which proceeds to a central ganglion; *4th*, The ganglion itself, which is separate and special for each class of sensations; *5th*, The nerve proceeding from the ganglion in the direction of the parts excited; *6th*, The muscles moved by such nerves which are usually attached to the solid parts lodging the sensitive surface. In regard to the collateral connections of the circle of Sensation with other circles, there will also exist nervous communications between the ganglion and other ganglia, whose operation may occasionally modify the natural course of the primary circle. Such collateral communications with other circles, and especially with the general current of mind, will have to be occasionally alluded to in the exposition of the Senses in detail.*

We are commonly said to have five Senses—Sight, Hearing, Touch, Taste, and Smell; but this enumeration is now generally admitted to be incomplete. In our present exposition we shall recognise seven different classes of Sensations, as follows:—

Inferior or Animal Sensations.	*Superior or Intellectual Sensations.*
1. Sensations of Organic Life;	
2. Sensations of the Alimentary Canal;	5. Sensations of Touch;
3. Sensations of Taste;	6. Sensations of Hearing;
4. Sensations of Smell.	7. Sensations of Sight.

In this list we have not included the Muscular Feelings, although these are a very distinct class, having very much of the character of Sensations; but our reason for so doing is, that the muscles form an essential part of each sense, and fulfil other functions of a peculiar and distinct kind, which would not be expressed by simply classing them among the senses. They are a wholly unique part of the human system, and must be described by themselves, and not as a member of any group whatsoever. We shall have to allude to the feelings arising from them in the course of our description of the different senses, of each of which they form a part.

The tests of a distinct sense are distinctness of external object, distinctness of organ, and distinctness of internal feeling or consciousness.

1. Sensations of Organic Life.

By these we understand the feelings arising from the operations and processes for sustaining the life and vigour of the system; such as, the assimilation of nutritious matter, the removal of waste, the circulation of the blood, the action of the various secreting and excreting organs and viscera. It is found that the process essential to organic life is the formation of cells, and the building up of all the tissues after the proper fashion of each, which implies the other processes of carrying the proper material to each part, and removing what is superfluous and waste. Bones, joints, muscles, nerves, mucus-membrane, skin, cellular tissue, &c. must be renewed as fast as it is consumed; and the acts both of consumption and renewal, according to the manner that they go on, give rise to a set of feelings or conscious impressions agreeable or otherwise. From all parts of the body there would seem to arise a class of nerves for conveying inward some impression of the general well or ill-being of the animal system for the time. Such impression makes part and parcel of the general consciousness, and of the mental existence and happiness or unhappiness of the individual. It may come equally from the whole frame, or more intensely from some parts than from

* For a further exposition of the anatomical or physiological character of the subjects treated in the present sheet, the reader is referred to the No. entitled 'Animal Physiology' in Vol. I.

others, in consequence of some peculiar local influences. In the case of a general impression of one even character, pleasurable or painful, the muscular response is seen in the general attitude of the body, which chimes in with the character of the primary stimulus. In one state the body assumes a serene, placid, reposing condition, so as to enable the collective sensation of the system to be more intensely felt; in a different state, the circle is completed by a series of uneasy movements and forced attitudes, as if to evade the feelings of one's own fleshly existence, or to stifle disagreeable impressions. But unless the consciousness be wholly engrossed by some other circles of operations, the well or ill-being of the animal system, as a whole, is sure to be felt in the mind, and to carry out a particular stimulus, and impose a particular expression upon the muscular attitude of the body. Hence all the agents that promote or pervert the healthy action of the system influence the consciousness through this source. Pure air, wholesome nutriment, proper temperature, a congenial electrical state, all affect us through this branch of our sensibility; and all disorders, diseases, lacerations, wounds, perverted or excessive action of the assimilating, secreting, absorbing, or circulating vessels or tissues, influence the mind and the bodily attitude through the same source. When a locality is specially affected, there is a muscular movement imparted to the locality, such as would tend to increase the pleasurable or diminish the painful action. Thus a painful wound in the foot keeps up a stimulus of the muscles attached to it, in the vain endeavour to give it a position such as would ease the suffering; and it is this muscular endeavour that indicates to the mind the direction or locality of any special action of an unusual kind in any part. We are often very much agonized in disorders of the inward viscera, in being unable to direct a muscular movement specially to the part, from its being out of reach of our muscles, but we nevertheless are urged to keep up a stimulus on such as are nearest the disordered region.

Compared with the bulk and massiveness of the entire body, the feelings of its well or ill-being are faint, if we consider how intensely we are affected by such small organs as the ear, the eye, or the nose. It seems intended merely that we should be sufficiently aware of our general state of animal existence, to take an interest in the preservation of our health and vitality, without being wholly engrossed by caring for it. Its sensations enter into the stream of consciousness with a view of requiring the other circles and activities of mind to do what is necessary for the support of life, and for the avoidance of injurious agencies; and we are rewarded by their agreeable character, and by the cheerful cast they throw over our general consciousness, when their indications have been wisely attended to in the provisions made for our healthy subsistence.

2. Sensations of the Alimentary Canal.

It would seem that a special set of nerves is devoted to receiving into the conscious train the states of the stomach and other parts of the alimentary canal, in addition to the nerves which give the sensations of organic life. No other internal organ or viscus affects the mind so powerfully as the stomach.

The sensations are produced by the contact of all kinds of food, and at every stage of its passage through the canal, in the mouth, pharynx, œsophagus, stomach, and bowels. The character of the food in respect of materials and of mechanical consistency determines the character of the feeling; hence the range of feelings is as wide as the range of different alimentary substances, but the distinction between distinct kinds is not always very marked; the great characteristic being, how far it agrees with, or can be readily reduced by, the digestive action of the stomach.

The surface of contact is the mucous surface of the canal, which is covered with glands that secrete liquids to combine with the food. This act of combination or mixture gives forth an influence to the nerves which is carried to the appropriate central ganglion. This ganglion has not been specifically pointed out by anatomists.

The immediate response of the impression is an action upon the general attitude and position of the body, much in the same way as in the response to the organic sensations. An agreeable stomach-feeling leads us to adopt an easy, resting, relaxed posture, that may permit the digestive action to have its full sweep, and to be fully felt; whereas imperfect or obstructed digestion leads to an irritable, uneasy movement, to quench or suppress the disagreeable sensation.

In the general consciousness the alimentary feelings are very powerful, and communicate a decided cast to the temper of the moment. Scarcely any of the other sensations are so influential on the pleasurable or painful, cheerful or gloomy, turn of the thoughts and emotions. Some of the most horrible states of the system are connected with the stomach—as, for instance, nausea and sea-sickness. So, on the other hand, a good dinner is one of the most gladsome influences of human life. Nature has thus secured a high degree of attention to the proper choice and timing of the matters supplied to the alimentary system.

The Alimentary Sensations are the first steps or primary stimulus of one of the most powerful animal appetites, and of a very large amount of the general aims, purposes, and activity of life both in the lower creatures and in man.

3. Taste.

This is a peculiar sense attached to the portal of the alimentary canal, to be an additional help in discriminating what is proper to be taken as food, and an additional source of enjoyment in connection with the first reception of nutritive material.

The substances used as food are more completely distinguished by the taste than by the feelings of digestion. The tastes of bodies are as widely different as is their chemical composition. But in order to have a taste, a substance must be either liquid or soluble in the mouth. Taste is one of our principal means of discriminating one material from another. There are probably many thousands of different tastes in nature.

The surface of Taste is the tongue and the overhanging palate, which yield a glandular secretion to combine with the substance tasted; and the result of this combination acts upon the gustatory nerves, and is thence conveyed to the gustatory ganglion.

The muscular response completing the round of a sensation of Taste, is directed to the muscles of the mouth, jaws, and throat, and tends either to expel or to receive more completely the substance tasted, according to its character. If agreeable, the matter is kept and conveyed to the stomach, in order that it may be enjoyed to the full. Many substances unsuitable for the alimentary canal are rejected by the ordeal of Taste; but not all unsuitable substances, any more than all substances unsuitable for organic nutrition are rejected by the alimentary feeling of the stomach.

To produce exquisite Tastes is one of the standing endeavours of man, and constitutes the special art of cookery, which, however, is apt to invert the order of real importance of the three classes of wants—of Organic Life, Digestion, and Taste.

The sensations of taste are more distinguishable and clear in the general consciousness than the sensations of digestion, but they have a far weaker influence upon the total temper and enjoyment of the system.

Taste is the foundation of an appetite distinct from the alimentary appetites, although allied with them; but the craving for objects of Taste does not arise within the system in the same periodical and imperious form as the craving for food to the stomach.

4. Smell.

This sense is situated close by the sense of Taste, and often co-operates with it; but properly the sense of Smell is the guardian placed at the portal of the lungs to test the purity of the breathed air.

The objects of Smell furnished by nature are innumerable. Their essential conditions are to be volatile, and to have an agency of a chemical or some other kind on the liquid secreted from the lining membrane of the nostrils. Solid bodies cannot have a smell unless they possess some volatile ingredient.

The surface of the sense is a membrane lining the complicated cavities, cells, and interior convolutions of the nose, which membrane is very extensive in consequence of this cavernous and convoluted arrangement. It is covered with mucous glands, which yield the liquor that combines with the smelling emanations; the combination producing an impression on the nerves, and these conveying it to the olfactory ganglion situated within the skull above the cavities of the nose.

The returning muscular influence that completes the circle of a sensation of smell, bears upon the breathing action, and upon the opening or closing of the nose. A pleasant smell stimulates an increased inhalation of the breath; a repulsive smell inspires a strong expiration to throw out the offensive matter. Animals have thus a timely warning of what is good or bad for the breathing apparatus.

Smells, like tastes, are very clear and distinguishable, and very delicate tests for discriminating material substances: they are therefore extremely valuable in an intellectual point of view; but their massiveness or influence on the temper or condition of the general consciousness is comparatively small; and only a small portion of human labour is employed in furnishing such of them as may be agreeable.

As giving origin to appetite, smells are more powerful in suggesting tastes and alimentary gratification than on their own account.

In the lower animals, smells are the first step in many appetites, instincts, and actions, which they do not inspire in man. The pursuit of prey, and the desire for the opposite sex, are in many instances initiated by sensations of smell.

5. Touch.

This we rank as the first of the higher or intellectual senses: it being not merely a knowledge-giving sense, as all the senses are, but a means of forming the higher combinations which are the instrumentality of intellect.

The great difference between the lower and higher senses is, that the sensations of the higher are distinctly recognised as made up of separate parts lying in different directions, and indicating that the object in contact with the surface of sense is spread over space, and has distinguishable portions that may be noticed separately, and lead to a separate muscular response. The feeling of Taste or Smell gives no indication of direction or surface, or of the external position, or even the external existence of its cause: the muscular response can have respect only to the sensitive surface as a whole, there being no discrimination between one portion and another. But in Touch, each separate point sends in its separate sensation, which may bring out a separate muscular response, and a distinct act of attention from the mind at large. The higher sensations have therefore form, shape, and distinctness of parts, and clearly indicate extension in space by requiring the muscular organs of response to travel across the objects from one point to another. Hence in them each nervous thread must have an independent ganglionic centre, and an independent connection with the responding muscles. The lower sensations, on the other hand, are, if we may so speak, shapeless and inarticulate.

The surface of Touch is the skin, which is unequally endowed with sensitiveness; being most sensitive at the tips of the fingers and on the lips and tongue; and least so in the hollow of the back. The test of this quality is the nearest distance of two distinguishable points. On the hollow of the back, the points of a compass three inches apart give only one sensation: on the tip of the finger, two points distant by a very small fraction of an inch are recognised as distinct.

The kind of action on the touching surface is essentially mechanical pressure, or compression of the parts. This pressure affects the imbedded nervous fibres, and stimulates in them the influence that they carry to the nervous centre of touch. The pressure may be of few points or of many; it may be gentle or heavy, and accompanied more or less with adhesiveness, as in clammy substances: the pattern of the surface or of its pressing-points may be various without end; and lastly, there may be movement or friction in innumerable degrees and modes; from all which we see the sources of the variety of influences, and the consequent variety of possible sensations.

The ganglion or central seat of Touch has not been completely ascertained, but has been conjectured to be a certain portion of the base of the brain called by anatomists the *Thalamus Opticus*.

The out-going nerves lead to the muscles of the organ touched, and the usual responsive action is to grasp the object in contact; or if it be of a repulsive kind, to relax the grasp, and withdraw from it.

The qualities of body made known by Touch are such as hardness, roughness, solidity; and in combination with the muscular movements that complete the nervous circle, it gives us the sensations of extent of surface, size, and shape. Each muscular position assumed by the touching organs gives a distinct feeling, and a series of muscular positions makes up one characteristic complex feeling. The muscular part of this sense also gives the feelings of force, strength, and resistance, as well as of physical contact.

The sensations of Touch are the starting-points, and the source of guidance to a large proportion of bodily movements, instructive, habitual, and voluntary, as in many of the manual and mechanical operations.

In the current of the general consciousness, these sensations are of great importance.

Sensations of Heat.

These are so very distinct and peculiar, that they have been sometimes considered as an independent class: but there are reasons for believing that they are only a variety of Touch. They are felt by the surface appropriated to Touch, and conveyed by the touching nerves; and the chief action of heat on any body is the mechanical effect of expansion; or its opposite, contraction. None of the ordinary sensations of Touch, however, give so powerful a feeling or so energetic a stimulus as heat. The response to an agreeable warmth is to keep up the exposure of the part heated.

Heat and cold in the internal parts of the body become mixed in their effect with the organic feelings and processes, on which they have a very powerful influence. The formation of new cells, the oxidation of the tissues, the secretions and excretions, are all stimulated and controlled by temperature, and the sensation of temperature comes to be felt through these. On the whole, in proportion to the influence of heat on the system, is the effect of the feeling it gives on the general consciousness, and the craving or appetite founded upon it; and likewise the exertions of human life that are set agoing on its account.

The feeling of warmth combines, with the other sensations of Touch, in discriminating the surfaces of bodies and their qualities.

6. Sensations of Hearing.

This sense is more special and local than Touch, but agrees with it in being a mechanical sense, as distinguished from the chemical senses of Taste and Smell.

The action in the case of hearing is a very refined case of touch, being the pressure of a liquid on an expanded membrane of great delicacy, into which the nerves of hearing ramify.

The ear consists of three cavities: the outer cavity is open to the air and closed within by a tight membrane, or drumhead, which is the outer wall of the second or middle cavity: in this middle cavity is contained a crooked line of connected bones, one end of the line being lodged in the drum, and the other end on a hole

in the inmost cavity, called the labyrinth. The labyrinth is filled with liquid, and contains an irregular structure of bone described as consisting of a cockle-shell, and three semicircular canals; on the inner surface of these bones the nerves are spread out. The vibrations of sound strike the drum of the ear; the movements of the drum are communicated to the bones of the middle ear, and by them communicated as vibrations to the liquid of the inner ear, which presses on the nerve surface with more or less force, according as it is acted on by the bone in contact with it.

The impressions are carried in to an auditory ganglion, and the responsive movements are made by means of four muscles attached to the bones of the middle ear, whose action either tightens or slackens the drumhead or membrane: when a sound is agreeable, the membrane is tightened to receive it more distinctly; when disagreeable, the opposite happens, according to the usual law of the responsive action of the senses.

The sensations of Sound differ according to the character of the vibrations producing them, and these, again, according to the character of the sounding body, whose nature is thus discriminated by the sensations to which it gives birth. The vibrations may be strong or weak, rapid or slow (which is the chief distinction of musical sounds), regular or irregular, in a single or in many streams, and of a character varying with the substance producing them, which enables us to tell whether a sound proceeds from wood, stone, metal, &c. The liquid of the inner ear takes on a different movement and pressure from all these differences. Moreover, by means of the muscular part of the ear, we are made aware of the direction of the sound in a rough, and not very accurate way: the responsive action tends to stretch the drum in opposition to the source of the sound. The muscles are also affected by the greater or less strength of the sound, and by its variations of force, which require in them a variation of the adjustment. Moreover, the volume or expanse of sound has an effect on the muscular sensations of the organ, by causing a kind of broad sweep to be given to the directing bones, to take in the entire compass of the action. This broad sweep is in hearing, as in sight, the cause of a very powerful sensation: the roaring of the sea, the reverberations of thunder, and the firing of artillery, are examples of the objects that bring it into action.

The sensations of Sound are as numerous as the character, forms, sizes, and circumstances of sounding bodies, and are the medium of a very large amount of our knowledge of external things. They are the source of a vast extent of pleasure when wrought into music; and in the art of speech they exercise a very wide and manifold influence on the intercourse of men, and on the operations of the human mind.

As in Touch, the sensations of Hearing are resolvable into distinguishable portions, or have form and shape. They are also the starting-points of innumerable other circles of mind—instinctive, habitual, voluntary, intellectual, and emotional.

7. Sight.

This is undoubtedly the highest, most refined, and most perfect of the senses. The agent concerned in it, Light, is the subtlest and most exquisite power in nature: it has no mechanical momentum, but it seems to have the power of operating a very delicate class of changes upon material bodies, which changes are known to us only through itself, as in the processes of copying objects by the solar ray. The precise action of light on the surface of sense in the eye, cannot in the present state of our knowledge be described.

The surface of Sight is most probably the black screen in the back of the eye which we see shining through the hole of the pupil; on this black screen the nerve is spread out, to be affected by whatever changes light causes in the absorbent black surface.

The impressions are conveyed by a thick nervous cord to the optic lobes of the brain, and the immediate response is directed to the six muscles that move the eyeball, and turn it on every side to face the quarter of the rays of light. These muscles have the usual function of tightening up and adapting the organ to confront agreeable radiation; while for disagreeable sensations there is the additional apparatus of the eyelids, which, by a reflex action, screen the eye from a painful impression. The eyeball itself is essentially an optic lens. (See Nos. 8 and 16.)

The sensations of Sight correspond with the infinitely various character of luminous emanations, as determined by the surfaces they come from. The sun's light falling on bodies is reflected from each in a modified form dependent on the texture of the surface, and the sensations resulting are to us one means of distinguishing surfaces. The recognised varieties of light, as ascertained by our sensations, are chiefly intensity and colour, both of which are subject to innumerable shades of difference, according to the variety of the material substances presented by nature.

The muscular portion of the eye gives the sense of direction more accurately and decidedly than either hearing or touch. The adjustment of the eye to points of objects (the discrimination of which is exceedingly close) by the muscles, yields a most accurate estimate of their direction, such as the other moving organs can proceed upon in making for such points. The change of the ball from confronting one point to fixing it on another, gives the feeling of length in space; and the traversing of an area in all directions gives the muscular feeling of surface and expansion. There are certain muscular adjustments adapted to the distance of the object, and from these arise the feeling of distance from the eye; and when this is combined with the former, we have the feeling of cubical space. When the colours and shades of bodies unite their sensations with the muscular feelings of expanse and distance, we derive the feelings and notions of solid bodies. Professor Wheatsone has shown that the impression of solid shapes results more particularly from the combined images of the two eyes, which, as it were, take a grasp of an object by two faces, and thereby become sensible of its cubical form.

The pleasures of Sight are numerous and intense, and many of the fine arts have reference to them alone. Its share in the intellectual functions, and in the guidance of human life, predominates over all the other senses. Its impressions are more durable and more easily revived after the object has disappeared than in the case of any other class of impressions, and hence their importance to the intellect, which deals largely in the shades or remnants of departed sensations.

Muscular Feelings.

Muscularity being not a sense, but a portion of the circle of each of the proper senses, its peculiar feelings must, as we have seen, enter into all sensations. We shall now allude to these feelings apart from their connections with the senses. The muscular system is the essential instrument of all thought, emotion, and activity, and the great link of connection between any one nervous circle and another.

The muscles are subject to many states. They may be tense or relaxed; they may move rapidly or slowly, continuously or interruptedly, rythmically or irregularly; and each state has its own separate feelings. They also yield great differences of feeling according to the degree of vigour or weariness that may belong to them. As they constitute a very large mass of the human system, their mere animal changes of nutrition, exercise, and exhaustion, give forth strong impressions to the general consciousness. In this respect muscular states have nearly as great an influence as alimentary states.

There is an extensive adaptation of the machinery and arrangements of life for the express object of meeting the wants and capacities of the muscular system—such as furniture, carriages, walks, sports, gymnastics, &c. It is needless to add that it is our only means of acting mechanically on the external world.

The prominent feelings and notions derived from it are those of *force*, *power*, *might*, *energy*, or *resistance*: also the feeling of motion as a property of matter, of space as the field for motion, and of time as marked out by motion through space. All these feelings the muscular system contributes to our three higher senses —Touch, Hearing, and Sight.

When a sensation is followed up by an instinctive or other action, the muscular part of the sensation yields the impression that wakens up the action: or a muscular sensation is the link between one act and another everywhere throughout the system.

APPETITES.

These are peculiar and distinct states of mind allied to the Sensations, but involving in addition some of the other active circles. When a sensation is of that uneasy character that is not satisfied by the proper muscular response, but maintains in the general consciousness an irritable unresting state, so as not to allow the mind to go on calmly, unless something has first been done for the relief of the locality affected, the action is called an Appetite or craving. Such cravings generally imply that there is a want or deficiency in the part they arise from.

The animal system works to a great extent on the principle of alternation of states. Each organ usually passes through successive conditions—such as nutrition, exercise, and repose—and it manifests a craving for each in their turn: if this craving is gratified immediately, appetite is swallowed up in satisfaction or contentment; if not, the general consciousness is disagreeably acted on by the irritation of the neglected organ, and the powers of body and mind are, as it were, importuned till the want is allayed.

Each class of sensations contains among its number sensations of appetite; indeed the whole of the so-called disagreeable sensations may be considered of this kind. The sensations of organic life become cravings when the system is not in good working order, or is refused its proper alternations of treatment. Thirst is perhaps one of the most intense of this class. The wants of digestion yield the well-known appetite of hunger: it and thirst being the most powerful cravings of the system. Taste and smell do not readily yield appetites that are the consequences of wants periodically growing up in the organs; but when they are roused by an agreeable contact, they put forth a craving for its continuance up to the point of satiety. There are many other appetites that are only roused by a present stimulus, leaving with them 'out of sight out of mind.' The appetite of sex originates within the body like hunger, but its strength of craving depends very much on the presence of external stimuli; and hunger itself may be increased by such means, as in the presence of an abundant and dainty meal. The appetites of the muscular sense, which are alternately for exercise, rest, and nutrition, are next in strength to hunger. The appetite for sleep arises within the nervous and muscular system. The higher senses have but moderate cravings, these being chiefly for the alternation of stimulus and rest: the eye, when fresh and strong, craves for light, and the ear desires sounds; when wearied, they seek to be withdrawn from such influences.

When a diseased state comes over any of the organs, the craving thence arising differs from ordinary appetites in not suggesting the means of relief. But this difference is only apparent, for the appetites do not generally of themselves point out what is required to satisfy them; either experience, instruction, or a special instinct is needed for this purpose; the exceptions are such cases as sleep, and the cravings for activity and repose.

The Appetites are largely involved in human enjoyment, and are stimuli to human thought and activity. In proportion to their strength, the frequency of their recurrence, and their capacity of being gratified, is their influence on the general stream of consciousness. The Desires (subsequently treated) differ from the Appetites only in bringing the intellect more fully into play.

INSTINCTS.

These belong to the special means of action that each animal possesses for accomplishing its various works, and fulfilling the ends of its existence. They are the untaught activities and capacities of the animal nature.

When we keep out of view the reflex actions, which have been commonly classed with instincts, the instincts in man are such as these:—

First, A large class are referable to the tendency of the system at large to accord or fall in with the state of any one part. A sudden stroke of pain produces first by a reflex movement, or rather by the natural course and completion of a sensational circle, a retractation of the injured part; and next a general commotion of the body at large, a cry of agony, and a general convulsion of limb and feature. This extension of the attitude of a part to the whole is to be called instinctive, and it is effected under a general law of the muscular and mental system, by which there is a constant tendency to unity of position and state over the whole. Rapid movements of the limbs produce like movements in the exclamations, looks, features, gestures, and even in the very thinking processes. By this principle it is that the body follows the lead of the eyes in walking or taking an aim.

Walking may be reckoned an instinctive action, although it takes a little practice to be perfect in it. The motion that it involves—namely, an alternate swing of the legs—is natural and spontaneous from the earliest period of infant life. This exemplifies another general property of the muscular and nervous system, which is the principle of *alternate motions*. The members that are in pairs tend to move by turns in consequence of an express organisation suited to that effect. The eyes are an exception to this law. A third character of the muscular constitution is the power of *vermicular motion*, or the tendency, where there is a succession of members, for a movement to pass from one to another through the whole system. The progressive motion of worms, and the action of the alimentary canal, take place under this principle; but it also acts in the progression of quadrupeds, and in the climbing action of man and other animals.

But the most strongly-marked description of instincts are such as seem to proceed upon an innate knowledge of what is usually learnt by experience alone. This is exemplified in the action of the senses of taste and smell, when they enable us to decide upon what is good for the alimentary canal in the first place, and for the organic system in the second place, as in the choice and rejection of food. A still more surprising anticipation is in such a case as when an aquatic bird knows water by the sight before it has ever been in it. The migrations of birds show the same characteristic of preordained knowledge: a certain sensation tells them which is the direction of the warm regions of the earth, just as men know it by the mid-day sun, or by a weathercock. Many animals are supposed to excel the human species in their pre-established connection between the sensations of smell and taste and the wholesomeness of the food of which they should partake.

The elaborate constructiveness of many animals—such as the bee, the beaver, and the nest-building birds —is a still higher stretch of instinctive or preordained power; although probably, when better studied, these operations will come under simple laws, such as have been alluded to above.

A circle of Instinct is usually secondary, or in succession to a circle of Sensation. The muscular feeling that terminates a sensation is the first step in an Instinctive circle; and if there be several successive movements, the feeling of the last muscular position in one movement is made to stimulate the ganglion which sets on the second. Thus, in walking, the feeling coming from the muscles of the right leg, at its full forward position, is conveyed to the ganglion that sends out the stimulus to the progressive muscles of the left leg, which is moved forward accordingly.

There are certain of our judgments and beliefs that are usually considered as Instinctive; but these require to be taken up subsequently among a higher class of Activities. We here close the group of Sensations, and their allied Appetites and Instincts.

THE INTELLECT.

The products arising from the action of the powers of the Intellect upon the Sensations, Appetites, and Instincts, or upon the more simple circles of mind, are very numerous and varied, and might be exemplified by all the arts, sciences, and organisation of human life, and by what is meant by such terms as Understanding, Reason, Judgment, Abstraction, Memory, Imagination, Invention, and the like.

The first property or law of mind upon which Intellect is based, is a property that seems to adhere to the inferior circles as such, and therefore we do not state it as one of the laws of Intellect proper. It is the law of the permanency, endurance, and coherence of sensational states. When a surface of sense is impressed by an object, and the influence transmitted to the central ganglion, from which the responsive action proceeds outward to the connected muscles, we find that the impression once made continues for some time more or less after the object is withdrawn; the sensitive surface, the nerves, the ganglia, and the muscles, all retain for a short period the state which they have once been made to assume; or the circulation of influence perseveres in the absence of what set it on. We find also that the effect of each stimulus is to leave behind it on the circle a certain bent or susceptibility to the same stimulus at another time. If the same sensation be repeated, the sensitive surface will take it on more readily, the nerve will convey it with more alacrity, and the responsive muscles will be found more vigorous and alert in the execution of their function. This is one of nature's laws of the growth and development of our capacities of sensation and instinctive action: it is the principle that enables us to acquire a command of our senses and instinctive movements; the efforts of attention by the eye or the ear, and the alternate movement of the limbs, although provided for by the original organisation, are not perfect until they have been familiarised by practice and repetition with the operations that have to be gone through. The law in question is therefore one of nature's regulations for the growth and maturity of the system; and it continues through life, although most vigorous in its workings during early years. It might be called the Law of Sensational growth.

The laws of Intellect proper make a very decided advance beyond this. Instead of simply hardening or confirming the current of each sensation in its own circle, they bind separate sensations to each other, and build up complicated masses of sensation and activity, which may not merely be more easily revived by the repetition of the first impressions, but which may be revived without employing the original in any shape, so that we may live in a world of the most varied sensation while none of the objects of sensation act upon us at all, and may be affected by impressions recovered from the repositories of the mind more powerfully than by any action direct from nature without.

The First Law of Intellect, properly so called, has been termed by psychologists

THE LAW OF CONTIGUITY.

Two or more sensations, impressions, actions, or states of feeling, existing together or in close succession, tend to cohere, so that the future occurrence of any one of them is sufficient to restore or revive the others.

As we have at least seven senses, and as each of these may be stimulated by a successive stream of distinct sensations, and as we have also appetites and instincts, besides higher emotions and activities, and since we are ever in the presence of a world that sheds innumerable influences upon these varied susceptibilities, it is obvious that the stream of general consciousness, or of the waking mind, must be a highly-complicated train of movements. In this state of things the law of contiguity comes into play, and determines that the impressions, feelings, and movements that have run together for a certain length of time, or have been repeated sufficiently often, shall so cohere, that when one is roused by its outward or inward object, the others shall be manifested along with it, independently of their original stimulus. If we take, for example, a concurrence of two sensations, one of sound, and the other of sight, as the sound and the sight of rushing water—after a sufficient length of time the two impressions so grow together, and are so cemented by an operation going on within the mind, that the one may at any time recall the other: if we hear the noise while the object is concealed, the visible picture starts up nearly as if we were looking at the reality. The law of contiguity develops, as it were, within the mind a power of bringing before it the same impressions as are ordinarily given by the agents without. We may thus have visible pictures, and audible and tangible impressions, and their completed circles, without the presence of sights, sounds, or contacts; and these impressions may be the first link in raising into action subsequent circles of appetite, instinct, or other activity, thought, or emotion. We shall now briefly state a few of the general results of this law; to develop them fully would far exceed our limits:—

1. The impressions of natural objects (which generally excite several senses at once) are compacted into wholes. Thus many things in nature may affect sight, hearing, touch, taste, and smell, and, it may be, the alimentary and organic feelings in addition; and by repeatedly experiencing these conjoined impressions, we come to form a complex impression or aggregate notion of the entire object. Thus our mental impression, what we call our idea or knowledge, of an orange, is an aggregate impression of this sort cemented by the force of contiguous association.

Many impressions that we are apt to reckon as single or simple sensations, have, in fact, been compounded by this associating force. Thus our impression of the round aspect of an orange is a complex impression of sight and muscularity; the visible picture being an aggregate of visible points, and the expanse and roundness being the result of the repeated sweep of the eyeballs over its area, which result is itself a complicated tracing of muscular sensations; and the combination of these with the visible aggregate makes the total impression of visible form.

Many natural objects, such as the human body, are permanently made up of a great many parts, each requiring separate acts of attention, and yielding separate sensations. The fixing of these altogether in one total impression is the effect of contiguity.

2. Besides the conjunction of parts in the same object, we also find that nature has in many cases coupled distinct objects together by some of those powers of distant influence which prevail in the world. Thus a warm latitude is coupled with rich vegetation, and a sea-coast with a moist and temperate character of climate. The tides coincide with the positions of the moon, and the migrations of birds with the changes of the seasons. These conjunctions are laws or ordinances of nature, and become impressed on the human mind by the association of contiguity.

3. The accidental juxtapositions that occur around us, or those conjunctions that may happen from any cause, and that continue in virtue of the inertness of matter, impress themselves in the same way. Thus it is that we carry about with us the picture and arrangement of our own homes, and of the localities where we have often been; we associate house with house, and street with street, and have in our minds a connected view of each prospect, large or small, that has been frequently before us. In short, all the fixed arrangements around us, and the local and geographical aggregates with which we have become conversant, become

permanently fixed in our conceptions, exactly as they stand in nature.

4. The whole class of regularly-recurring successions, including cause and effect, as the most invariable of all successions, are stamped in the mind by the same force.

5. The addition of names to objects for the conveniences of intercommunication and reference, is rendered permanent by the operation of contiguity. After a certain number of repetitions of the word 'moon,' while attention is fixed on the object, the two impressions come to cohere, and are thenceforth able mutually to recall each other. The acquisition both of our mother tongue and of foreign languages is therefore a consequence of this adhesive force. In like manner the fixing of connected series of words—that is, of narrations, statements, assertions, and literary compositions—or what is usually called 'a verbal memory,' depends on the same law.

6. All the steps of a connected procedure in the arts, professions, and occupations of life, are joined together after the proper degree of repetition, under this associating principle; and many other examples might be given. The time or the number of repetitions necessary for a full adhesion to take place, depends on the power of adhesiveness peculiar to each individual, and on the freshness and freedom from distraction of the mind at the time, as well as on the impressiveness of the objects. The force of contiguity is most energetic in early life, and seems identified with the vigour of growth of the system. It may be called the Law of Intellectual growth, since we have called the fixing of Sensations and Instincts the force of sensational growth.

LAW OF SIMILARITY.

Any present impression or state of mind tends to revive previous impressions that resemble it.

This law takes a very different sweep from the preceding. If the operation of contiguity has formed in the mind some great aggregate impression that has a distinct character and form, and if at any future time a new impression is made resembling it in one or more points, there is a tendency for the present to revive the past, and for both to flash together into one, so that the new image will receive all the particulars that the old can add to it, and will be saved the trouble of acquiring these afresh. If we suppose a person to see a ship for the first time, and to examine minutely all the peculiarities of its structure, within and without, and to dwell upon them so long that the aggregate picture of the ship clings together in his head, and can be revived entire when any part is brought before his view; and if after this he observe at a distance the outward form of a second ship, this by similarity will recall the already-formed picture of the first with all its details; and without having the means of fully examining the second, he can transfer to it at once the particulars of the other, and thus supply a knowledge of what is hidden from the eye. As nature has produced many repetitions of the same objects and forms, it is a vast economy of human labour to be able to know an entire class through a single individual thoroughly studied; and the application of what is known and conceived of one thing to all others like it, is effected through the power we are now considering. When objects are not perfectly identical, we have still the advantage of the similarity as far as it goes; and for each new individual, we need only to learn what is its difference from some one previously known, in order to possess a full acquaintance with it. We shall now adduce a few examples of this law:—

1. The extension of old sensations to new objects. We have seen that it is a work of time and growth to acquire the engrained sensation or aggregate notion of any one natural object—such as an orange, a tree, a house, a man. The mere round form of an orange requires a considerable amount of muscular experience often repeated; but when this form has been completely mastered, it is then easy to acquire the notion of the round form of any other round object. Being once exercised in the notion of roundness on some one individual case, we find it easy to fall into the impression in any other case: the old state is set on by the new contact. So with any other form, as of a tree, or of a plan of a country, or with any other sensation whatsoever. No matter although the already-acquired sensation is accompanied in the new instances with a different class of other sensations in the aggregate picture; it is the peculiarity of this intellectual force to break through unlike accompaniments, and still make like flow to like. The exercise of acquiring the sensation of roundness from an orange will serve us in acquiring the impression of an apple, or a plum, or a cannon-ball; and for each new case the labour of attention will be needed only for the new circumstances of colour, size, and modifications of the round form. So in the case of hearing: when the ear has been repeatedly exercised in a set of sounds, as in the words of a language or the notes of an instrument, it falls into or recognises them again under new combinations, as when repeated by a different voice or instrument.

2. The word *identification* expresses a large class of the operations of similarity. We identify a portrait with its original, the common features in a family, the sameness in character in the scenery of a country or in the aspect of a population, the institutions of different nations, the events of remote ages, the characters of different individuals—all by the force of this law. There are great inequalities in men's powers in this respect: in some, the differences in a few of the particulars serve completely to obstruct the perception of similarity, so that in many instances no recognition of the past in the present takes place, even though a real likeness obtains between them. An incapacity in tracing likenesses on this principle is the very essence of intellectual imbecility and weakness; and on the other hand, a high facility in recovering all past impressions that contain anything in common with some present impression, is the main foundation of all high intellectual power, capacity, originality, invention, and genius. The peculiar species of the capacity will depend on the other points of character; but the main absolute force of it resides in the perception of likenesses, and the revival of the past by the force of similarity. To the extent that we are unable to bring up past acquisitions of mind to serve present emergencies, we lose all the advantages of nature's repeating herself in many circumstances, and have to undergo fresh labour for every individual case.

The identification of the identical phenomena of nature often demands an intense power of similarity, owing to the repulsion of unlike circumstances. Thus the man that identified the attachment of the moon to the earth with the fall of a stone, will be reckoned through all time to have been a very extraordinary genius; ordinary minds would not have traced anything common in appearances which to the superficial eye are so utterly unlike. The identification of lightning with the spark of an electrical machine is another example of the same uncommon force of intellectual perception. Thus the inductions and generalisations of science are in the main the consequence of great stretches of the power of similarity.

3. In literary efforts there is abundant scope for tracing the operations of the same power. A great part of the formation and growth of language lies in applying old names and expressions to new objects, in consequence of a felt identity or likeness between the things. Thus the word 'head,' primarily applying to a part of the human frame, has come to be used in reference to innumerable other things quite different, but having all some one feature in common with the human head; as the 'head of a house,' the 'head of a mob,' the 'heads of a discourse.' The great class of expressions called 'metaphors' are struck out on the same principle, and are produced most abundantly by the men that possess an intense power of bringing together like in the midst of unlike.

4. The tracing out of unity, consistency, harmony,

and uniformity, in a mass of varied things and circumstances, is a direct effort of similarity.

5. The application of general laws and rules to individual cases, and deductive reasoning, in general demands the same effort: it is only in virtue of similarity of subject that a law or rule can be transferred from one case to another.

In every high operation of intellect and genius this power is requisite. Contiguity leads to routine, and to the arranging of things as they happen to be in nature by mere juxtaposition; similarity breaks through juxtaposition, and brings together like objects from all quarters. It is by far the grandest manifestation of the human mind; it enables us to rise to the unity, simplicity, and comprehensiveness of plan that regulates the complicacy of the world's arrangements and movements, and lessens to an unlimited degree the toil attendant on man's situation in the universe.

LAW OF COMPOUND ASSOCIATION.

Impressions, notions, or thoughts, may be recalled more easily by being associated with two or more impressions or objects present to the mind at the time, whether by contiguity or similarity.

The two forces of contiguity and similarity express all the powers that nature appearr to employ in maintaining the operations of the human intellect; but there are certain peculiar cases of their working that deserve to be specified as separate, although dependent laws. One of these is the case now supposed. When there are present to our minds two impressions, ideas, or pictures, each associated, either by contiguity or similarity, with some third state that is past and out of mind at the time, the compound action is more effective than either action by itself; that is, the separate bonds might be too weak to revive the past object, but acting together they succeed.

A common example is furnished by such a case as our endeavouring to remember something said or done on some past occasion, whose other circumstances are distinctly before us. The bond of contiguity not having been strong enough to connect the remembered circumstances with what is sought, we fail in the attempt; but should anything cross our minds having some slight resemblance to the matter in question (perhaps too slight to have revived it of itself), the faint contiguity, joined to the faint similarity, effects the revival of the recollection that we were struggling for. So two contiguities or two similarities will always be more powerful than one. Names that we have both read and heard, or that have been associated both with a book and a speaker, are most easily revived when both book and speaker are in our view. A complex scene may be revived effectually if there are present to us several representatives or resemblances to it in several aspects.

LAW OF CONSTRUCTIVE ASSOCIATION.

The mind has the power, by means of association, to form or construct aggregate impressions of things, exactly as if they were derived directly from the outer world acting through the senses.

We have hitherto referred to the revival of past impressions of objects, exactly as they were formed by the action of the originals on the senses and intellect; but this does not exhaust the range of the intellect's powers. It is possible to form a picture of what has never been experienced, to all intents and purposes the same as the pictures of actual experience; and the effecting of this is what we denominate 'constructive association.' To take a simple example:—

Suppose we see a building formed of brick, and desire to judge the effect which it would have if composed of marble, we require to construct a new conception, where form and outline shall be derived from what is before us, and substance and colour from our notions of marble. The effort is one coming under the class we are now considering, and is within the power of an ordinary intellect. A still more easy effort, however, would be to conceive a known building transferred from its actual site to some other site, also clearly conceived, and to form the complex conception of the scene so composed. By a little exertion, we could impress on our minds the picture of the supposed combination exactly as if it had been a real scene that we had long and familiarly known. The power of contiguity would suffice to make a coalescence of the imagined ingredients as well as of actual combinations. Such instances of the mere addition or substitution of a new ingredient in an aggregate found in actual life, are among the simplest and easiest efforts of the faculty in question.

The difficulty of the process increases with the complexity of the combination. Should we desire to realise to ourselves a town on the site of London, with the streets planned on a different scheme, such as that proposed by Sir Christopher Wren, and the houses all built of red sandstone, and the inhabitants dressed in the Oriental costume, we should find a prolonged and energetic effort necessary; and very few people would ever succeed in realising the combination with the same clearness and steadiness as if they had actually lived for some time in a place so made up. It is, nevertheless, within the power of the human mind to do so. By conceiving as vividly as one is able each of the particulars in turn, and by going over the whole again and again, they would at last aggregate themselves into a single whole, which might be retained and repeated in the view till it held together as a coherent picture. Such an exercise is perhaps one of the rarest that is ever attempted by the mass of mankind, who have in general no adequate estimate of the amount of undeveloped capacity lying in human nature.

One of the commonest classes of cases under this law, is the case when some object in nature is represented by one of the imitative arts, and when we resolve the representation into a reality by adding from our experience of realities what is deficient. Thus if we endeavour from a dead statue to conceive a living man, we must endeavour to bring together the conception of the statue and the conception of true flesh, and of the actual colour and aspect of life, and maintain the two conceptions in our view till they fall into one, and become to us the picture of a living human being having the shape and expression of the statue. This would be reckoned an exceedingly difficult effort—the difficulty arising partly from feebleness of faculty, and partly from want of exercise and cultivation. Men of superior minds, or who have made this a study, would perform the operation with ease.

To realise a person or scene from a painting is an effort of the same intrinsic character. We require to keep in view some real scene in order to acquire the expanse and the colours of a reality, and to take along with this the form and outline given in the picture, till the two are fused, if we may so speak, together, or till the scene represented in the picture is the same to us as if we stood before the reality.

This faculty enters into all the higher operations of mind. It is the direct basis of Imagination, and is requisite in Reasoning, Abstraction, and in every kind of originality. It represents the highest range and consummation of the human intellect.

THE EMOTIONS.

The Emotions are a class of feelings in their nature analogous to the Sensations, but differing from these in being mixed up and associated with intellectual operations. They might be not inaptly defined as Intellectualised Sensations.

There is not the same anatomical distinction among the Emotions as among the Senses, nor can they be classified solely by a reference to the structure of the human frame. Several of them have a very specific local apparatus, such as Tenderness, and the emotion of the Ludicrous; but as respects many others, we must, in arranging them, refer to the objects of the outer world that set them in action. Man is not fitted up so

much with certain particular emotions, as with a large capacity of emotion; and according as he is acted on by the things about him will his emotions show themselves. New circumstances and large changes in the constitution of human society develop new feelings of interest and new trains of emotion. The unfolding of the mysteries of nature produces a class of feelings unknown to ignorant ages; but the men of these ages were in their turn affected with a species of wonder and awe, which disappeared before the growth of the scientific analysis of the world. The emotions produced in the mind of one that can look back over a vast series of historical revolutions, could not, in their faintest germ, be traced in a denizen of primitive society. So all the new works of men, and all the great changes that come over the peopled earth, give birth to original and appropriate emotions, which bear a part in giving an interest and a charm to human existence. Likewise each variety of condition, rank, and occupation, has its own form of stirring the human breast, and its peculiar resources against the cold, dull, empty, blank condition of mind that is reckoned one of the greatest miseries of existence. Emotion, in the practical point of view, is the opposite of ennui.

Adopting the order of arrangement which seems to us on the whole the most convenient in a brief sketch like the present, we shall commence with

THE EMOTION OF TERROR.

The feeling of Terror, in its most simple form, is an instinctive tremor communicated to the system in consequence of some sensations, that, while being disagreeable, are new, strange, or unwonted. Objects that have the aspect of might or power acting in an entirely new form, and suggesting destruction or danger without indicating where, how, or when, disarming resistance by uncertainty, and giving no sign as to what should be the proper response of the system to their approach, are said to be objects of Terror, trembling, or alarm. The physical action of shaking or quaking seems to be the result of the breach that arises in the nervous circuit, as when a sensation is conveyed inwards which is incapable of rousing some one distinct stimulus to the responsive muscles outwards, or which suggests two or three at the same time, that paralyse each other, and lead to none being issued. This state of things seems constantly to produce a quaking agitation of the whole frame, with an unsettling of the tone of the system, and a very great discharge of nervous energy, which paralyses and weakens all the powers of life. A visible blow may require all the force of the system to meet it; but if the response or mode of resistance be distinct and clear, it does not paralyse and debilitate the living energies. The uncertainty which is the cause of Terror is the opposite of knowledge, experience, and familiarity, or of the full intellectual recognition of the whole train of circumstances attached to each event. Terror, therefore, is to be met by knowledge.

To early life and inexperienced minds, many of the objects of nature are the cause of Terror. Children are dismayed by strange faces and strange dwellings. Rude nations are terrified by eclipses, comets, earthquakes, and rare appearances, and only extricate themselves by imagining some connections between them and the powers above, which give them a meaning and purpose. The pestilence walking in darkness is an object of universal Terror; it becomes disarmed, according as we are able to see the fixed laws and conditions of its working. A government that acts without the medium of law is a reign of Terror; confidence is produced by adherence to known rule. Ailments which we have formerly gone through are looked upon with indifference; but any symptoms of disorder not experienced before put us in a state of alarm. Uncertainty is always a cause of disorganisation of the whole plan of human life. Prudence and morality are supported by a clear perception of the consequences of our actions, and of all that is likely to come upon us. It takes only a very small matter to induce a state of Terror; but as in the kindling of a fire, or the bursting of a flood-gate, the evil consequences may be a thousandfold more extensive than the cause. The minor instances of this emotion are seen in the bashfulness, shyness, and reluctance that are felt in entering upon new occupations, or coming before new people or strange assemblages. There is a considerable waste of nerve incurred on all such occasions Terror is the noxious ingredient in superstition of all kinds, being the natural result of the ignorance and uncertainty that superstition grows upon. Fear is only a variety of Terror, having in it somewhat of the anticipation of certain evil; and as we are rarely prepared to meet an evil event so as completely to disarm it of its pangs, a certain amount of Terror is inspired by the anticipation.

When mixed up with many other feelings of a different description, Terror is sometimes reckoned an agreeable stimulus; as in poetic and dramatic compositions, legendary tales, and superstitious rites. It is then diluted to the degree of throwing an interesting excitement around matter that might otherwise be felt as dull and insipid.

The emotions of Wonder, Surprise, and Astonishment might be classed next to Terror, as having a certain degree of affinity, although so far distinct as not to be included under it. Their object or exciting cause is some breach of expectation, or something occurring where a very different thing was looked for. Experience leads us to adopt certain views as to the usual course and arrangement of affairs and events, and when they turn out in contradiction to our preconceived notions, we are affected with a kind of shock or excitement that is called 'Surprise.' When a thing very much surpasses in kind or degree the notion we had formed of it, or disappoints our expectation to a great and unaccountable extent, we 'wonder,' and are 'astonished' at the event. This feeling, therefore, so far agrees with Terror, that it has reference to our previous knowledge, and to its being nonplussed by actual occurrences; but it does not imply, in ordinary cases, that we are unable to give a distinct response to the appearance, or that we fall into the tremors of painful uncertainty. In a world so complicated and so hard to predict, Surprise often overtakes us, and may be accounted one of the standing emotions of human life. Being an excitement of a not disagreeable kind, it is courted and made use of by the artists who make a trade of carving out excitement for their fellow-men.

'LOOKING BEFORE AND AFTER.'

This may be adopted as the general designation of a group of emotions having reference to things past, future, or distant, which can therefore be present only to the intellect. It is not, however, the mere fact of absence that gives a peculiar emotion to such things, for a beautiful scene excites the same feeling, whether we are looking at it or merely remembering it; the peculiarity arises from their influence on the present. In describing the higher activities, we shall have to allude to the effect of absent objects in stimulating Desire and Active exertion; at present we shall consider only one special case, which will be readily recognised under the denomination of 'Plot-Interest.'

The simplest form of this emotion is seen in the ordinary action of taking an aim, which is common to man with animals. The eye is fixed upon something within its reach, and the other organs are put in motion to secure it within their grasp also. The feeling that predominates between the moment of taking an aim and the complete possession of the object, is a distinct and often-recurring experience of human nature, and is what we here call plot-interest. It is remarkable for the intense way that it occupies the entire being, both body and mind, sense and activity. A nervous thrill passes through the whole of the system. An animal in pursuit of its prey, whether by chase or by climbing, and all the occupations of human beings that involve the taking of an aim

and the following up of a lead, exemplify the position that brings out plot-interest. Life is full of such cases, having all degrees of complicacy, from the simplest situation, as in applying food to the mouth, where the plot lies between the cup and the lip, up to the most complicated search that the intellect can be occupied with. Wherever an object is fully before the view, and the whole of the activity of the frame set in motion to approach it, and where a palpable progress is making, we have the circumstances calculated to bring out this emotion. Its intensity depends in the first place on the strength of feeling we have for the end in view, and in the next place, on the rapidity of the approach, and the nearness to the end. The engrossing power of the situation arises from its strongly inflaming some appetite, and through that the active organs of the frame; and the larger the amount of activity brought into play, the deeper the engrossment of the mind. In running a race, the interest is in proportion to the stakes, and is most intense as the goal is neared. An infusion of uncertainty, which communicates a slight tinge of terror to the emotion, increases the excitement of the contest.

The sports, pastimes, and pleasures most commonly resorted to for affording exhilarating and satisfying employment to human beings turn for the most part upon the emotion of plot. Field-sports, and games, and contests of strength and skill, are all of this character. Even in the stir of social assemblies, much of the action and reaction of man on man presents this kind of interest mixed up with other sources of satisfying excitement. In putting a question, and waiting for the answer, or in making a remark, and watching the response, there is a deliberate taking of an aim, and a moment of watching and suspense while looking for the effect.

In the literature of emotion, or the productions of literary art intended as a sort of higher pastime, plot-interest is a predominating feature.

Under the same head of 'looking before and after,' we must place the emotions of hope and fear, or the feelings that arise from the action of present circumstances on future plans, projects, expectations, and hopes. The human mind being capable of forming pictures and projects of the future, and being disposed to occupy itself as intensely with these as with anything present, it experiences a peculiar emotion when anything happens bearing on its remote interests. The intoxication of hope and expectation is often more powerful than any feeling of enjoyment of what is strictly present. Many men are peculiarly liable to be swayed by hopes and day-dreams, and the leaders of mankind have often acted on this weakness.

EMOTIONS OF SOCIABILITY.

The emotion of *Tenderness* is the most prominent of the feelings of Sociability, and is deeply rooted in the structure of the human frame. In its simplest form and manifestation it supposes two human beings, the one dependent upon the other for help, succour, or support; and it is contrasted with isolation, self-sufficiency, and independence. It produces a powerful sensation in the breast, extending to the organs of utterance and sight; and in its extreme state of violent outburst, it causes convulsions in the one and moist effusions in the other. The muscular response is further completed by the action of embracing in folded arms.

Nature has provided for this emotion such a large compass, and so many degrees of expression, that nothing less than some extraordinary occasion brings out its extreme manifestations, except in children, savages, and persons of great constitutional weakness of nerve. The feeling can be made apparent by a very slight tinge given to the tones of the voice, and by a certain well-recognised attitude of the eye, while the embrace is reduced to the simple shake of the hand; it being one of the refinements of civilised life to suppress all the violent exhibitions of passion, and employ only such as are mild, gentle, and suggestive.

This emotion shows to what an extent nature has formed human beings to depend on one another. It belongs to all men more or less, and in the average it bears a high proportion to the general capacity of emotion inherent in our nature. The institutions and arrangements of human life which flourish upon it are likewise numerous and engrossing.

Pity and compassion are very common forms of the feeling; but besides being limited to a single class of the cases coming under it, they express only the feeling on one side. The beings that are the objects of the compassion are themselves affected with the very same emotion (provided they respond at all to the feeling exercised towards them) as the persons who show the pity.

The affections at large are based on the tender emotion, and are expressed in part through its signs. Parental, filial, and fraternal love, and the feeling between dependents and superiors in general (when the relation is one of feeling, and not of worldly interest alone), and between men co-operating and sympathising in some common object, are all supplied from this fountain. The attachment of the sexes involves it to a large extent, and the position assumed in the relation of man and wife is manifestly calculated to bring it constantly into play. Affection, in the ordinary sense, means a relation of habitual tenderness.

Pain, suffering, and violent shocks are apt to express themselves in an outburst of tender emotion; but this is to be regarded as a by-use, and not the main purpose of the feeling or of its instrumentality. Such a turn given to the expression of pain is like an appeal for help, or a confession of dependence. It may often be noticed that the outburst of grief is always accelerated by sympathy from a second party, owing to the natural effect in mutual feelings, for their expression in one person to bring out a corresponding expression in another. The most natural and primitive expression of pain in the isolated individual is the sudden retractation of the wounded part, followed up by the instinctive actions of rage, resentment, and hostility. It is always a sign of weakness, or of the strength of the emotion of dependence, when it passes into grief. The pains which most naturally and immediately cause grief are the pains of wounded affection.

Warm-heartedness, kindliness, geniality, are common terms for the manifestations of tenderness, or for the characters where it is strong. Benevolence on the large scale is prompted by the same emotion, which may therefore be considered as one of the sources and mainsprings of human goodness.

Veneration, reverence, or worship may be ranked next among the social emotions. The object of this class of feelings is dignity or greatness, which is another name for the possession of power of some kind or other. There is an attitude and an emotion caused by the aspect of power and might which is of a peculiar and distinct kind, tending to the prostration or bending of the body, whereas the carriage of greatness itself is extreme erectness of posture. The emotions of veneration and reverence are, as commonly understood, somewhat more complex than the mere bending to power: they generally imply something of love or of approbation and delight towards the character or nature of the power, being opposed to mere superstition or terror, where power causes quaking and dread. Some natures are so constituted as to be exceedingly sensitive to the aspect of dignity, majesty, and grandeur, and to delight in the posture of reverential homage; and as the world presents many objects of this character, such an emotion will be frequently called into exercise. The principal practical effect of the susceptibility is to lead to a ready submission to the authorities and powers that rule over men.

Admiration is another feeling of the same class of sociable emotions. It couples together wonder and the feeling of power, and relates to what is not merely great, but surpassing in its kind, unexpected or inexplicable. It does not imply overpowering might so much as rare and surprising excellence, which delights us by serving

its ends, and astonishes us by our not being prepared by the ordinary course of things to meet with it. High virtues, great genius, and extraordinary energy and will, are among the objects of universal admiration.

Esteem is more of an intellectual effort than of an emotional outburst, and consists of a certain appreciation of the qualities and virtues of individuals in reference to their position, pretensions, and our tastes and standards of judging. The resulting emotion is expressed by such terms as respect, deference, and the accordance of position and regard. Such an emotion is the foundation of one of the forms of liking or attachments between individuals, or one of the bonds of sociability. All these emotions, of veneration, admiration, and esteem, have their opposites, whose definition is determined if the emotions themselves are clearly defined.

EMOTION OF THE LUDICROUS.

This emotion is exceedingly characteristic and distinct, both in the anatomy, the consciousness, and in the objects that bring it into action. The clash of the dignified, venerable, august, lofty, or great with what is mean, contemptible, poor, or insignificant, produces a conflict of attitude and emotion which is relieved by the outburst of laughter. The act of laughter is a series of convulsive expirations, which are as it were the descent from the tense, erect, dignified attitude of the body to the relaxed posture, or the posture that agrees with the absence of all feeling of power or worship, and with the presence of ease, carelessness, and abandonment. If an object that naturally possesses the aspect of dignity is accidentally brought into a position where it unavoidably assumes a character of vulgarity, degradation, or meanness, it is impossible to regard it in both lights at the same instant; for the human constitution cannot sympathise with two such opposite objects at one time; either we refuse to attend to more than one of the points presented; or we are torn on the rack of conflict; or nature takes its course, and we burst into laughter.

Humour is felt to be a higher, finer, and more genial thing than wit, or the mere ludicrous; but the exact definition of it has occasioned some difficulty. It is the combination of the laughable with an element of tenderness, sympathy, warm-heartedness, or affection. Wit, sweetened by a kind, loving expression, becomes humour. Men who have little tenderness in their nature, or whose language and manner are destitute of soft, warm, and affectionate feeling, cannot be humorists, however witty they may be. There is no humour in Butler, Pope, Swift, Dryden, Ben Jonson, or Voltaire.

EMOTION OF SIMILARITY.

The intellectual power of like recalling like, even out of remote positions and distinct circumstances, produces a distinct agitation or thrill of feeling that deserves to be reckoned as a separate emotion. All the discoveries of identification, where use and wont is suddenly broken through, and a common feature made known among objects previously looked on as entirely different, produce a flash of agreeable surprise, and the kind of peculiar sparkling cheerfulness that arises from the sudden lightening of a burden. The variety and complexity of the world acts like a weight or pressure on the human intellect, and every case of newly-found identity is a diminution of the weight: the labour of comprehension being reduced by the discovery. To understand the fall of bodies on the earth and the motions of the planets, required two separate efforts of study before the time of Newton; but now one study serves for both. The first effect or flash on the mind of such identities in the midst of endless variety is always startling and agreeable. The same effect happens from happy comparisons or illustrations, which save the labour of the intellect in comprehending some difficult matter, by recalling something exactly similar from among our previously-understood and familiar conceptions, as when a bellows is brought to mind in order to make known the structure of the lungs. The identification of common features in the characters of men and societies in distant regions and remote ages, has the same cheerful, enlivening effect. It is like the encouraging stimulus that we derive from a stroke of success, or a sudden lightening of our load of labour and care. It is one of the prerogatives of human genius to furnish such identifications and comparisons, and in this way to ease and enchant the course of human existence.

FITNESS—KEEPING—HARMONY—BEAUTY.

These emotions all result from certain intellectual relations of sensible objects, and they are closely allied with the emotion of similarity. They all suppose, more or less, some coincidence, likeness, or common effect, among things which at first sight seem unconnected and irregularly varied; and their influence on the mind is of the lightening, cheering, and encouraging kind—'a thing of beauty is a joy for ever.'

When any work has to be done, any difficulty or resistance to be overcome, the party having the thing in hand naturally feels a certain sense of pressure or weight in contemplating or conceiving it. The actual accomplishment of the task is the natural and obvious relief to the pressure. But it is also lightened by the perception of any set of means that seem peculiarly fitted for the end in view. Any tool that achieves its object easily, and with all the appearance of ease, is an object of agreeable emotion. A sharp, clean knife, a well-fitted, smooth-going set of machinery, and everything that not only does its work well, but does it in a way to suggest that it does it easily, give manifest pleasure to the beholder. A powerful, healthy animal frame is a pleasurable object, from its suggesting power and facility in accomplishing its work. One of the beauties of dress arises from its appearing to give great ease and freedom to the animal movements.

All complex objects and scenes which strike the mind through several avenues at the same time, have the chance of producing currents of thought and feeling that either agree or disagree with one another. The agreement causes a pleasurable emotion, the disagreement the reverse. If we see a rich man refusing himself the comforts of life, we suffer from a conflicting impression, and we describe the fact as being out of keeping, inconsistent, and discordant. On the other hand, a person who acts in all points, and puts on all the appearances consistent with his position, character, and duties, is an object of agreeable emotion. We often say that houses ought to be in keeping with their inmates, and with the purposes they are to serve; and we have a distinct pleasure in finding that they are so. It is not difficult to understand that all conflicting trains of association, thought, and feeling, must be painful, weakening, and paralysing to the human constitution; while the concurrence of the same trains from different quarters gives a feeling of lightness, strength, and support. The standing object of man must always be to overcome the resistance to his path, to reconcile opposition, and bear burdens; and everything that reduces the amount of the burdens, or increases the sources of support, will be a direct source of happiness or of pleasurable emotion; and all the appearances about us that solicit our attention will be lightening or oppressive according as they communicate a concordant or a discordant set of impulses.

There is an effect produced in the various fine arts, which is in fact the very essence and cream of art itself, or the most genuine artistic impression. It is what is called harmony and melody in music; picturesque in painting; keeping in poetry; and fitness and suitableness of the parts, exquisite adaptation, and the essence of beauty, in all the regions of art. When we put a number of like things together, as soldiers in a line, there is an agreeable feeling of order and uniformity; but the force of art lies in joining two or more things of different composition and make, which nevertheless produce a fine harmonious feeling. It is in Greek architecture, the harmony of the columns

and the entablature; in Gothic, the harmony of the spire with the arch; and in all styles, the harmony of the decorations with one another and with the main body. In sculpture, it is the suiting of expression to mind, and of attitude and drapery to expression. In painting, it is the composing and grouping of things such as will in different ways excite the same emotion. In speech, it is the suiting of the action to the word, the sound to the sense. In poetry, which combines the spirit and effect of music and painting, the scope for fine harmonies is unbounded.

ACTIVITIES.

Under the heads of Reflex Acts, Appetites, and Instincts, we have already noticed a certain number of the capacities for action belonging to the human constitution. Under the present head we are to consider a higher order of activities; namely, such as are regulated by intellect or connected with the emotions.

DESIRES.

These are analogous in their nature to the appetites. They express the cravings or longings of an unsatisfied system for some objects that are imagined or conceived capable of satisfying it. They originate in an irritation of some part of the frame, which suggests to the intellect certain objects that would allay it; and the bent of the mind becomes in consequence occupied upon these objects, to the exclusion to a certain extent of other trains of thought and emotion. The Appetites are confined to the Sensational circle, but the Desires extend to the circle of emotion and intellect, and take in all the gratifications that are associated with the higher regions of mind. Among the most conspicuous and pressing of the ordinary Desires of mankind, we may cite the following:—

Avarice, or the desire of wealth, or of the aggregate of material advantages resulting from human labour, and exchangeable in the commerce of the world. The longing for food is an appetite; the longing for money, which will procure food at any time, as well as other things, is an intellectualised longing or a desire; the associations of intellect are interposed between the thing actually enjoyed and the thing longed for. Habit often has the effect of making the desire terminate in the money, and cease to have any regard to the primary objects of enjoyment with which it was originally associated.

Ambition, or the desire of power, grandeur, influence, importance, admiration, and worship among our fellow-men. As human nature is formed to be intensely gratified by power and influence on the one hand, and by admiration, homage, and esteem on the other; and as it is easy to conceive to one's self, or to imagine the possession of these attributes, they readily become objects of ambition. The more obvious and conceivable gratifications are always indeed the most popular, and the most eagerly sought after.

Curiosity, or the love of knowledge, is a more intellectual kind of desire than either of the others. It supposes a mind alive to the emotions attending the acquisition and possession of knowledge, and of those identifications that increase the sphere of human insight into the world. In this, as in all other desires and appetites, the enjoyment of a certain amount of gratification suggests a still larger amount to the imagination, and thereby creates the desire.

The desire of *self-cultivation* and of the high development of one's own nature and faculties, is one of the most elevated of our desires, proceeding on a strong appreciation and estimate of the higher qualities of human nature. There must be in the mind so actuated a susceptibility to human worth, either from a perception of what is best in one's self, or from a discrimination of the finest qualities of others. There can be no desire unless an idea is formed of the object, and unless this idea is capable of exciting some lively emotions, which emotions are the mainspring of the desire.

Desire is to be contrasted with satisfaction, contentment, satiety, and serene enjoyment of the present. Contentment is the happiest condition of man. Desire has always in it something of the nature of an internal conflict or opposition of states, and it is therefore so far a source of waste, disquietude, or unhappiness; but it is one of the preliminaries of energetic activity and determination directed to the accomplishment of great objects. Nevertheless, for the peace and harmony of the individual, it is essential that Desire should always as soon as possible be swallowed up, either in contentment or in action, both which states are consistent with the most perfect unison of all the powers of the system.

HABITS.

As the Desires are parallel to the Appetites, so the Habits correspond to the Instincts: they refer not to the stimulants to action, but to the capacities and means of acting.

We have already shown that the instincts become perfect under the operation of the law of sensational growth, and that on this consideration walking is to be considered as an instinct and not a habit. The true habits are best marked out in the class of cases where actions are acquired that are opposed to the instinctive tendencies, as in some mechanical processes where the rythmical action of the two arms is contradicted. For example, in hammering a piece of iron, the motion of the arm that wields the hammer is totally different from the motion requisite to hold the hammered rod. Such an exertion can only be learned by subduing an instinct. The confirmation of an instinct takes place through the law of sensational growth; the contradiction of an instinct and the formation of a habit depend on the force of intellectual growth expressed by the law of contiguity. The manner of originating habits is well known. We must by some effort of will, imitation, or external compulsion, place the organ in a certain position, or force it to go through a series of movements a great number of times; and in the course of this repetition or prolonged action, a cohesion grows up between the different steps of the process, and at last they succeed one another independently of the compulsory effort that first joined them together.

We have therefore in each case of habit, *1st*, Some power capable of communicating a bent or a series of movements to some of the organs of the body or mind; *2d*, The continuance or repetition of the process; *3d*, The operation of the adhesive power named the force of contiguity, either to contradict an instinctive series of movements or originate some separate and distinct series; *4th*, The resulting confirmation of the bent or train desired to be imparted to the system.

The mechanical arts and the bodily carriage require a training, or a class of habits to be communicated to the general bodily mechanism. The soldier has to learn a peculiar set, and peculiar trains of movements, in decided opposition to the bent of the untutored rustic, who has allowed his instinctive movements to have free scope, and who comes into the army with all the characteristics of the natural man.

The repression of instinctive movements is implied in habits of self-command, coolness, and composure under irritation or some exciting stimulus. This repression is at first effected by strength of will, by imitation, or by external compulsion, and in the end becomes habitual and easy. The resistance to terror, which is a powerful emotion springing from a natural instinct, may likewise be formed into a habit of courage. Habits of obedience are created in opposition to self-will, and to the instinctive tendency to follow out one's prevailing temper. Habits of authority have to be acquired in spite of the disposition to sympathise with our fellow-beings under all circumstances. Habits of promptitude, activity, and alertness are frequently the result of a long-continued contradiction of the natural character. Habits of grace and polite demeanour are in many persons a growth forced entirely from without, and not coinciding with a single tendency of the na-

tural man. The native instincts and emotions may be overpowered by habits, or in persons where any of them are deficient, they may often be replaced by habits.

When a natural susceptibility is increased by exercise, as in the perfecting of the senses, we prefer to call this a case of sensational rather than intellectual growth; but the communication and improvement of the higher tastes and sensibilities, such as the sense of beauty, is a case of purely intellectual growth, and is therefore properly considered as a habit.

The capacities of human nature in general are a mixture of primitive impulses and instincts with acquired habits. Some natures come into the world far more richly endowed with instincts than others; and some have the advantage of an aptitude for fixing habits, and of opportunities of forming them. The strength of the adhesive force of contiguity is the measure of the rapidity of converting attempts and instruction into habits. But as all such acquisitions are identified with the processes of the organic growth of the system, they are most easy in early life, when this growth is most rapid, and they are weak in old age and in times of declining health. When new habits have to be formed, the best circumstances for their growth are such as are favourable to the freshness and vigour of the nervous and muscular systems. The processes of mind depending on the intellectual power that we call similarity, are not so dependent on the vitality and growing vigour of the frame as the processes coming under contiguity.

BELIEFS.

The nature of belief or faith has had occasion to be intensely and widely discussed, as being involved in some of the fundamental doctrines of the Christian faith.

The thing to be chiefly kept in view in settling the nature of faith is, that it is a thing not of the intellect solely, but also and mainly an active principle, impulse, or force, operating upon human nature to cause it to act or to resist action. Our desires, passions, and impulses, are often suppressed by the power of our beliefs. It is by faith that a burnt child avoids the fire.

Belief must always have a reference to action; without this it has no meaning. When we go to work with the view of producing some effect, it is on the ground that a certain action of ours will be followed up by some other things that we desire to happen. We go to rest at night, believing that we shall awaken in the morning refreshed; we labour, in the belief that we shall be rewarded; we lay up store for the future, in the faith of its being preserved to us by the laws of our country. Belief implies knowledge, or the possession of some facts, truths, or propositions about the world; and it implies further, that these have been so engrained in our minds, or that the sequences and conjunctions implied in them are so firmly associated together that they form a link in our actions, and that we feel sure of the eternal constancy of the tie that binds them together. When we throw water on a fire to quench it, we do so by the force of our determination to quench the fire, joined with our belief in the fact that water will have the desired effect; and the more firmly the two ideas of the application of water and the extinction of fire are rivetted in our head, or the stronger our faith in the sequence, the more unhesitatingly do we proceed to act upon it. But in cases where the tie is weak, the action is vacillating and undecided. Belief of some degree or other is co-extensive with knowledge, or with propositions or affirmations respecting the order of nature and the course of events.

Some of our beliefs are instinctive, and anticipate our experience of nature. Every instinct that leads us to perform an action for the sake of a subsequent effect involves a belief. But the most important of our instinctive beliefs, is the belief that we have in the uniformity of nature, and in the resemblance of the universe at large to the parts that we have had experience of. We cannot think of the distant and unseen without supposing it to be analogous to something that is present or seen, and we act upon this assumption. We cannot help believing that other human beings are like ourselves, and that we will always continue in our present way of thinking and feeling: nothing but a laborious intellectual process, and much labour and experience, will dispossess us of these primitive convictions of our being. When they are once modified and corrected they are of great value to us, but in their original shape they are very far from the truth.

All our active tendencies involve beliefs or convictions, and the action often suggests the belief. He that has a strong desire for stimulants, generally has the belief that they are for his good: and our partialities for individuals make us believe in their being possessed of good qualities without any other evidence. Making, as we always do, the sweeping assumption that our own actions and conduct are exactly what they ought to be, we are led into many minor assumptions and beliefs as necessary consequences.

There is a certain class of assertions that sometimes receive the name of moral truths, because they affirm moral qualities and obligations: as when we say justice is right; the laws of the country are obligatory upon its citizens; to show mercy is a virtue. Such persons as are strongly penetrated with these maxims, and disposed to act upon them on all occasions, may be said to have strong faith in them; and they that make light of them, or set them aside from trivial motives, are said not to believe them. In the same way there are religious truths—such as, 'God is good'—and the intense possession of them, with a practice corresponding, is called religious faith. It must, however, be admitted, in reference both to the moral and the religious impressions, that 'faith,' or 'belief,' is a somewhat awkward mode of expressing them.

The faith that above all others dignifies and perfects human nature, is faith in evidence or in proof; which means, in other words, a belief in what is found in nature on a careful and sufficient examination. There are certain tests or criteria of whether or not a statement agrees with the fact of things, and these tests are called the proof or evidence of the affirmation; and when a man has brought himself to appreciate these, and to bow to them with the whole force of his nature, he may be considered to be a truly rational being, or a being at one with the decrees and ordination of the world. This faith in evidence is not an instinct, but a growth confirmed by the force of habit, and acquired in defiance of many of our most powerful natural impulses. It is produced by large dealings with the actual world, and by the cultivation of the exact sciences, or the departments of knowledge which have been brought to express with perfect accuracy the invariable order of nature.

IMITATION—SYMPATHY.

We had occasion to speak of a certain class of emotions as the emotions of sociability; and we have likewise a class of activities that might be entitled sociable activities. They are the forces given forth by one human being, and influencing other human beings, and their tendency is to produce a harmonious or common action in aggregates of men. In this way society is formed, and brought to act like an individual. We have seen that there is an instinctive law of human nature for the purpose of harmonising the attitudes and actions of the various organs of the human system; we have now to recognise the more extended impulse that causes man to act upon man till a harmony arises through each collective mass of human beings.

Imitation and Sympathy are names used for one and the same peculiarity, which we may describe by saying that the expression and outward actions of one man have a tendency to stimulate a corresponding state of mind in all other men that have occasion to witness them. In the great majority of cases, the full effect is prevented by the action of some of the other forces of human nature; but the influence still exists. It extends to every feeling and state of mind that can

be embodied in a distinct outward expression. We find it to be a common remark, that the strong outbursts of emotion are infectious: people can rarely stand unmoved before the influence of laughter or tears. Enthusiasm of any kind, which means an intense exhibition of some particular emotion, is always catching. The strong expression of reverence or admiration is apt to find its echo in all bystanders. The gait and manner of one man may be communicated to the persons about him if they are of the susceptible character. The unoccupied minds and undecided activities of the young are shaped by spontaneous and unconscious imitation to a still greater extent than by express rules or formal guidance. More widely still, imitation impresses a common cast upon the language and manners of families, tribes, and nations, and perpetuates the same forms from generation to generation.

The imitation may be of very obvious and conspicuous bodily actions, or it may reach to the subtlest peculiarities of mind. In the one case it is a mere instinct, in the other it is an instinct extended by intellectual associations. The literal copying of an outward act needs no intellect, as we may see in the case of repeating a sound or a gesture; but when we imitate the modes of thinking of other men, or embody in our own language the thoughts that reach us in the language of others, there is an express effort of the powers of intellect requisite; more especially the powers of similarity and constructive association. The instinctive imitation or literal copying is within the capacity of many animals; and some races of men, such as the Sclavonic populations, possess the power in high perfection; but the imitation of an idea, so as to put it into different forms and language, is an act that shows a considerable force of intellect. Sir Christopher Wren's imitation of St Peter's is very different from the practice of literally copying Greek temples in every imaginable kind of building.

It has been common to designate certain of the fine arts, such as sculpture, painting, and poetry, Imitative Arts, and to ascribe their origin to the innate tendency of man to imitation, thereby recognising the production of likenesses or similitudes as one of the active principles of human nature.

THE WILL.

This is reckoned the highest and noblest of all the active impulses of man. Its operations are based on intelligence, and they are intended to enforce the conclusions of the reason against the instinctive and passionate impulses. By the intellect we make large generalisations of what is good for the future as well as for the present, and of what is good for society at large as well as for the individual; and in obeying the rules dictated by these intellectual considerations we are often unsupported by any instinct, habit, or imitative impulse; and were there not a large reserve of power in human nature we might rarely be induced to act in such cases at all. But in the very seat of intelligence itself there is a central force that gives impetus to its suggestions, exactly as the ganglia of sense and instinct send forth the requisite stimulus to the active organs of these circles. The power of the appetites and passions diminishes according as the object is distant and faintly perceived; the mere prospective knowledge that we will be hungry a year hence would not produce the same vigorous action as a present hunger, and would not produce action at all but for there being an additional centre of power attached to the region of intellectual associations. Obedience to remote and general views, and to what can only be conceived by the intellect, proceeds from this centre, to which we commonly give the name of Will. When we conceive to ourselves some extensive scheme that shall involve our whole life, and that we are urged to, not by some single appetite or instinct, but by an intellectual appreciation of our whole character and being and the circumstances that surround us, and conclude upon a line of action for carrying the scheme into operation, the execution will mainly depend upon our will, or on the force that usually goes along with the decisions of the intellect. No doubt the scheme being adapted to the collective impulses of our nature ought to be supported by these, but as it cannot agree with every impulse at every time, and as in some aspects it may be wholly repugnant to us, it would come to a stand if there were not a force independent of sense, appetite, instinct, emotions, desires, habits, and imitation, to carry us over the intervals when these are dormant or are opposed to our plans. Were it not for the power imbedded in the centre of intelligence, forethought would be quenched every day of our life by some strong impulse of our inferior nature. The desire of ease at one time and of excitement at another, the gratification of appetite, and the predominance of strong emotion, would be more than sufficient to counterbalance duty or prudence, if there were not a peculiar and distinct tendency or power to carry into effect the results of reason or the judgments grounded on our intelligence.

The character of Will in an individual will depend very much on the character of the intellect, or on the kind of considerations that it can most readily entertain. It is impossible that action can be more elevated than intelligence, or that a man can carry into effect more than he sees. The strength of Will does not increase with the strength of the intellect, but the one will always act along with the other. Energy following up reason and the generalities of prudence, right, and social good, and tested by overcoming occasionally all the inferior propensities of one's being, is the true definition of will; and the more elevated the character of the intellectual grasp, the more does the will stand apart from the other forces and activities of the being. When a man forms very refined and lofty ideas of prudence, self-culture, or social and moral duty, such as will require the restraint or suppression of many powerful impulses and instincts, and when his resolution is powerful enough to carry these into full effect, he must be reckoned a man of singularly powerful will as well as of elevated susceptibilities and intelligence. There is in some men a general temperament of activity or a strong tendency to action in every way that may be open to them, extending over all the specific impulses of the frame. In such men the force of pure will does not stand out so clearly as in the class whose temperament is naturally passive and susceptible, but who, on the spur of intellectual determinations, exert an unremitted energy of executive force.

The actions where a strong will is most required are such as, while they are at variance with many powerful propensities, are also opposed to common usage, or use and wont in the world at large, and of a kind that the individual is unaccustomed to. With opposing instincts, opposing habits, and, at the same time, an opposing social exterior of public opinion, any kind of proceeding must be intensely difficult, and must require a high development of pure will.

Excitement is apt to come into comparison with Will, and to be confounded with it. There is such a thing as a temporary increase of the whole activity or energy of the system, which enables a man for the time to excel himself, a reaction of languor and weakness being apt to succeed to it. But the proof of a strong will as against mere excitement is an unremitted and continued course of action, which may call for strong effort at any moment, and which is incompatible with intervals of weakness and irresolution.

Having now given a slight sketch of the chief elementary powers and peculiarities of the human mind, we ought next to go on to the consideration of the complex faculties and susceptibilities, such as OBSERVATION, MEMORY, ABSTRACTION, REASON, JUDGMENT, IMAGINATION, CONSCIENCE, GENIUS, &c.: but the discussion of these is not possible within our narrow limits, and we must therefore refer the reader to such works as those of Locke, Bacon, Reid, Stewart, and Brown.

PHRENOLOGY.

PHRENOLOGY is a Greek compound, signifying a discourse on the mind. The system which exclusively passes by this name was founded by Dr Francis Joseph Gall, a German physician, born in 1757. Dr Gall was led, when a schoolboy, to surmise a connection of particular mental faculties with particular parts of the brain, in consequence of observing a marked prominence in the eyes of a companion who always overmatched him in committing words to memory. Finding the same conformation in others noted for the same talent, he reflected that it was possible that other talents might be accompanied by external marks, and that dispositions might also be so indicated. He devoted himself to observing marked features of character; and on examining the heads, was struck with differences in their forms, there being prominences and hollows in some not found in others, with corresponding variations of character in the individuals. After most extensive and accurate observation, he first lectured on the subject in Vienna in 1796. There his lectures were suppressed by a jealous and ignorant despotism; upon which he abandoned Germany and settled in Paris, where he practised as a physician, and studied and extended his 'doctrine,' as he always called it, till his death in 1828. His great work, with its illustrative engravings, is one of the most extensive and beautiful examples of inductive evidence of which any science can boast. Dr Gall never took any particular step for making phrenology known in our island. With some slight exceptions, the science was not heard of in Britain till introduced by Dr Spurzheim in 1815. He was a native of Treves on the Moselle, born in 1776, the pupil, and, from 1804, the associate of Gall. Besides making many valuable discoveries in the anatomy and physiology of the brain, and ascertaining several organs in addition to those discovered by Gall, Dr Spurzheim had the distinction of systematising the discoveries of both into a harmonious and beautiful mental and moral philosophy. He died at Boston in the United States in 1832. Since then, the recognised head of the phrenological school has been Mr George Combe of Edinburgh, author of many popular works on the science, and its most successful teacher, by his public prelections in Britain and America. The applications of phrenology to insanity, health, and infant education, have been at the same time admirably made by the late Dr Andrew Combe. Whatever may be thought of phrenology as a system of mental philosophy, it is undeniable that its adherents have taken a lead in many social improvements, and shown the *practical* utility of their doctrines.

PRINCIPLES OF PHRENOLOGY.

The brain is the organ by and through which mind is manifested. Formerly, it was believed that *mind* and *body* were two distinct entities, and they were accordingly treated of separately by two orders of philosophers — the metaphysicians and the anatomists. In vain to the metaphysician was it obvious that we have no knowledge of mind but through the medium of a bodily apparatus, with which it grows and decays; he continued to treat of mind as a spirit unconnected with body. The anatomical investigator reasoned quite as unphilosophically when he assumed that mind was nothing but matter, the higher qualities of which were to think and feel. The phrenologist says he avoids both these assumptions. He does not pretend to know, much less to assume, the *essence* or nature of either mind or matter. Whether they are one or distinct is known only to the God who made them; and whatever they are, they must therefore be the best possibly adapted to their end and design. The phrenologist disclaims materialism, but affirms that mind can operate only by means of some kind of corporeal organisation. To all sane manifestations of mind, he maintains that brain in a healthy condition is necessary. In sleep, fainting, and compression of the brain, mind is suspended. Were it an immaterial spirit, acting independently of the brain, the repose of the material brain could not suspend the spirit's working. Pressure on the brain instantly suspends consciousness. Mr Combe, in his 'System of Phrenology' (4th edition, p. 14), describes several most interesting and instructive experiments on compression, as made by Richerand, Cooper, Chapman, Cline, and others. Pinel clearly traces to a *bodily* cause the diseased manifestation of mind called insanity, by the following case:—'A man engaged in a mechanical employment, and afterwards confined in the Bicêtre, experiences at irregular intervals fits of madness characterised by the following symptoms:—At first there is a sensation of heat in the abdominal viscera, with intense thirst and a strong constipation; the heat gradually extends to the breast, neck, and face, producing a flush of the complexion; on reaching the temples it is still greater, and is accompanied by very strong and frequent pulsations in the temporal arteries, which seem as if about to burst; finally, the nervous affection arrives *at the brain*.' What, then, follows? All the effects hitherto described are purely corporeal. Pinel proceeds—'The patient is *then* seized with an irresistible propensity to shed blood; and if there be a sharp instrument within reach, he is apt to sacrifice to his fury the first person who presents himself.' How powerfully this case connects mind and brain, and what a strong light it sheds upon that really bodily, that is, cerebral disease called insanity! The brain, when exposed, has been seen in *action* during emotion, conversation, dreams, &c. Sir Astley Cooper refers to the case of a young man who had lost a portion of skull above the eyebrow. 'I distinctly saw the pulsation of the brain,' says Sir Astley; 'it was regular and slow; but at this time he was agitated by some opposition to his wishes, and directly the blood was sent with increased force to the brain, and the pulsations became frequent and violent.' Blumenbach observed a portion of exposed brain to sink during sleep, and swell when the patient awoke.

From the above facts phrenologists assume:—1*st*, As there is no vision or hearing without their respective organs, the eye and ear, so there is no thinking or feeling without their respective organs in the brain; 2*d*, Every mental affection must correspond with a certain state of the organ, and *vice versâ*; 3*d*, The perfection of the mind will have relation to the perfection of its organs. According to this doctrine, therefore, the study of the cerebral organs is the study of the mind, in the only condition in which we can cognize it.

The brain being the general organ of the mind, we come next to inquire whether it is *all* necessary to every act of feeling or thinking; or whether it is divided into parts, each part being the instrument or organ of a particular mental act. 1*st*, It is a law of organisation that different functions are never performed by the same organ. The stomach, liver, heart, eyes, ears, have each a separate duty. Different nerves are necessary to motion, feeling, and resistance, and there is no example of confusion amongst them. Analogy, therefore, is in favour of the conclusion that there are distinct organs for observing, reflecting, and feeling kindness, resentment, self-love, &c. 2*d*, The mental powers do not all come at once, as they would were the brain one indivisible organ. They appear successively, and the brain undergoes a corresponding change. 3*d*, Genius varies in different individuals: one has a *turn*, as it is

called, for one thing, and another for something different. *4th*, Dreaming is explained by the doctrine of distinct organs which can act or rest alone. Its disjointed images and feelings could never occur if the brain acted as a whole. Undivided, it must either all sleep or all wake; so that there could be no such thing as dreaming. *5th*, Partial insanity, or madness on one point, with sanity on every other, proves the distinction of organs, and their separate action. *6th*, Partial injuries of the brain, affecting the mental manifestations of the injured parts, but leaving the other faculties sound, prove distinctiveness of organs. *7th*, There could be no such state of mind as the familiar one where our feelings contend, and antagonise and balance each other, if the brain were one organ.

These are grounds for presuming that the brain is not single, but a *cluster of organs*, or at least that it is capable of acting in parts, as well as in whole. For this conclusion the phrenologists have found satisfactory proofs in repeated observations, showing that particular manifestations of mind are proportioned, in intensity and frequency of recurrence, to the *size* or expansion of particular parts of the brain, and are thus to be presumed to depend on those parts. This is a law everywhere seen affecting organic nature; a large muscle, the conditions of health, quality, and outward circumstances being the same, has more power than a small one. The same is true of a nerve. Dogs have very large nerves for smelling, eagles for seeing, &c. A child's brain is smaller, and its mental power weaker, than those of an adult. A very small brain in an adult is the invariable cause of idiocy. A large head *may* be idiotic from cerebral disease, but a very small head, from defect of size alone, is always idiotic. Men of great force of character, such as Napoleon, Franklin, Burns, &c, had brains of unusually large size. Powerful energetic nations exceed weaker ones in size of head, and invariably, when brought into collision with them, overcome them. The average European head is to the average Hindoo as the head of a man to that of a boy; hence the conquest and subjection of a hundred millions of the latter by thirty thousand of the former. The general law, then, being that size of organ is accompanied by power of manifestation, we proceed to inquire, secondly, if there are any circumstances, and what these are, which modify this law. It will be found that *quality* of brain is a modifying circumstance, also *health* of brain, and *exercise* of brain.

Phrenologists conjectured that different brains differ in *quality*, but were long without any indications of these differences. The doctrine of the *Temperaments* has thrown considerable, though not perfect light on this point, and for this we are indebted to Dr Thomas of Paris. There are four recognised temperaments, accompanied with different degrees of power and activity—in other words, quality—of brain. These are the *bilious*, the *nervous*, the *sanguine*, and the *lymphatic*. The predominance of these several bodily systems is indicated by certain sufficiently obvious external signs, whence our power of recognising them, as fully described under ANIMAL PHYSIOLOGY, Vol. I. p. 125.

The brain must be in a *healthy condition* to manifest itself properly in the mental faculties. The phrenologist must therefore inquire into this circumstance, as the external development does not reveal it.

Exercise—or whether or not, and how, the brain has been exercised—is another condition to be inquired into before judging of two individuals similarly organised. The brain which has been the more and more judiciously exercised, will, other things being equal, manifest the greater degree of activity and power.

If size of organ implies vigour of function, it is of great moment in what region of the brain the organs are largest—whether in the animal, moral, or intellectual. On this preponderance depends the character. Two brains may be exactly alike in size generally, yet the characters may be perfect contrasts to each other. For example, there is nearly as much brain in fig. 2 as in fig. 1; yet fig. 1 is the head of Melancthon, the most virtuous and talented of the reformers; while fig. 2 is the atrocious criminal Hare, who murdered by wholesale for gain. The superiority of fig. 1 in intellect is obvious by one glance at the high and full forehead,

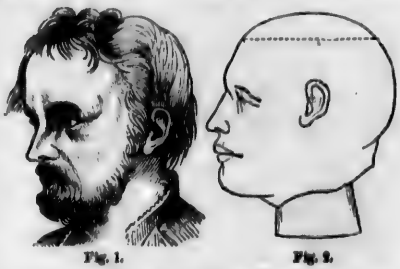


Fig. 1. Fig. 2.

compared with 'the forehead villanous low,' as Shakspeare would have called it, of fig. 2. The horizontal line in fig. 2 shows the shallowness of moral brain. A line drawn from the same points in fig. 1 would show a much greater depth; while the mass of brain behind the ear in fig. 2, compared with fig. 1, shows the preponderance of animal brain in the former.

PRIMITIVE FACULTIES OF MIND, AS CONNECTED WITH THEIR ORGANS IN THE BRAIN.

Mind, which was considered by the metaphysicians as a single thing or essence, was said by them to be capable of being in different *states*, in each of which states it made one of its various manifestations—as memory, judgment, anger, &c. In no particular does the phrenological hypothesis differ more from the metaphysical than in this. The phrenological doctrine is, that the brain, the organ of the mind, is divided into various faculties, each of which has its own modes of acting. It is accordingly held—

First, That by accurate observation of human actions, it is possible to discriminate the dispositions and intellectual powers of man—such as love, anger, benevolence, observation, reflection, and so forth.

Secondly, That the true form of the brain can be ascertained from the external form of the head; the brain, though the softer substance, being what determines the shape of the skull.

Thirdly, The organs or parts into which the brain is divided, all of which organs are possessed by every individual except in the case of idiocy, appear on the brain's surface in folds or convolutions, somewhat like the bowels or viscera of an animal, but have a well-ascertained fibrous connection through the whole substance of the brain with one point at its base, called the *medulla oblongata*, which unites the brain to the spinal cord. The organs have thus each a conical form from the medulla oblongata to the surface.

Fourthly, The brain is divided into two equal parts called *hemispheres;* on each side of the fosse or division between these hemispheres the same organ occurs; all the organs are therefore double, in analogy with the eyes, ears, &c. But when the term *organ* is used, both organs are meant. The organs which are situated close to the middle line vertically drawn on the head, though close to each other, are nevertheless double; for example, Individuality, Benevolence, Firmness, &c.

Fifthly, Besides the brain proper, there is a smaller brain, lying below the hinder part of the base of the main brain, called the *cerebellum*.

Sixthly, The brain, including the cerebellum, is divided into the *anterior*, *middle*, and *posterior lobes*. The cerebellum forms part of the posterior lobe. The anterior lobe contains all the intellectual faculties; the posterior and lower range of the middle lobe are the regions of the animal propensities; while the moral sentiments are found to have their organs developed on the top or coronal region of the head.

The gradation in size of the organs is denoted by the generality of phrenologists as follows:—

Very Small.	Moderate.	Rather Large.
Small.	Rather Full.	Large.
Rather Small.	Full.	Very Large.

In practice, the general size of the head is measured in several directions with calliper compasses. Twenty males, from 25 to 50 years of age, measured, from the occipital spine (the bony knot over the hollow of the neck) to the point over the nose between the eyebrows, on an average, 7¼ inches; some of them being as high as 8 2-8ths, and others as low as 6½. From the occipital spine to the hollow of the ear, the average was 4¾; some being as high as 5, others as low as 3½. From the hollow of the ear to the point between the eyebrows, as above, average nearly 5; some being 5½, others 4½. From the same hollow of the ear to the top of the head, about an inch behind the centre (the organ of Firmness), the average was 5 9-10ths; some being 6½, others 5½. Across the head, from a little below the tops of the ears (from Destructiveness to Destructiveness), the average was 5 8-10ths; some being 6½, others 5½. The averages are in these twenty individuals higher than those of the natives of Britain generally, some of them being large, and none small.

It ought never to be lost sight of that, in estimating character from development, it is not legitimate to go out of the same head, and compare any organ with the same organ in another head. This will never ascertain the effect of a particular organ in the head where it exists; and for the plainest reason, that character is another word for the most powerful organs, as modified by their neighbours in the same head. A virtuous person may have the organ of Destructiveness absolutely larger than a person remarkable for a violent disposition; but it will be found that there are moral faculties to control, or that there has been education to modify, in the one person, and not in the other. In studying phrenology, however, different heads may be compared, in order to observe where particular organs are absolutely large, and where they are absolutely small.

We have said, the larger the brain, and of course the head, the more the power. The old adage, 'Big head little *wit*,' is often true, but not always. It is true when, with a large brain, there is a lymphatic temperament, or when some damaging or deranging circumstance has taken place, to deprive the brain of its natural power, or when the largeness is not in the intellectual region. It is to be remarked, however, that even large animal brains have great *animal* power, in spite of their *intellectual* deficiency. A moderate-sized head, of which the brain is chiefly in the anterior or intellectual region, will have much more wit or cleverness than the other. Its power will be intellectual.

Phrenologists further distinguish between *power* and *activity* in the mental faculties. Power, in whatever degree possessed, is *capability* of feeling, perceiving, or thinking; while activity is the *exercise of power*, or the putting into action the organ with more or less intensity. An individual, for example, may possess great power of destruction, and yet it may remain quiet, and the individual be perfectly calm. His large Destructiveness, however, will be more prone to start into activity than a smaller would. Activity is measured by the rapidity with which the faculties act.

The powers of mind, as manifested by the organs, are called *faculties*. A faculty may be defined to be a particular power of thinking or feeling. A faculty has seven characteristics, in order to our concluding it primitive and distinct in the mind—namely, 1. When it exists in one kind of animal, and not in another; 2. When it varies in the two sexes of the same species; 3. When it is not in proportion to the other faculties of the same individual; 4. When it appears earlier or later in life than the other faculties; 5. When it may act or repose singly; 6. When it is propagated from parent to child; and 7. When it may singly preserve health, or singly manifest disease.

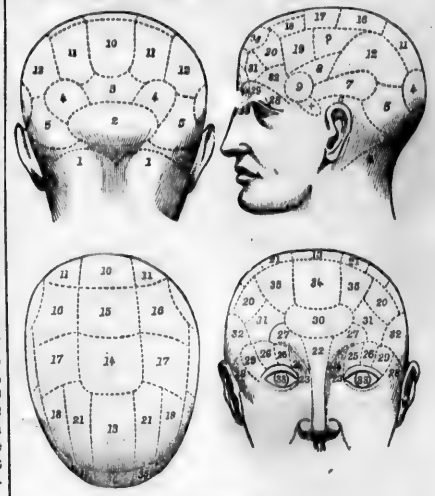
DIVISION OR CLASSIFICATION OF THE FACULTIES.

The faculties have been divided by Gall and Spurzheim into two great orders—Feeling and Intellect, or Affective and Intellectual Faculties. The Feelings are divided into two genera—the *Propensities* and the *Sentiments*. By a propensity is meant an internal impulse, which incites to a certain action, and no more; by a sentiment, a feeling which, although it has inclination, has also an emotion superadded.

The second order of faculties, the Intellectual, also suffers division into the *Perceptive* or *Knowing*, and the *Reflective Faculties*. The Perceptive Faculties are again divided into three genera—1*st*, The *External Senses* and *Voluntary Motion*; 2*d*, The *Internal Powers which perceive existence*, or make man and animals acquainted with external objects and their physical qualities; and 3*d*, The Powers which perceive *the relations* of external objects. The fourth genus comprises the *Reflective Faculties*, which act on all the other powers; in other words, compare, discriminate, and judge.

We owe to Dr Spurzheim the names of most of the faculties as yet in use; and they have only been ridiculed, on account of their novelty, by those who did not perceive their logical accuracy. In all the propensities we find the termination *ive* to denote the quality of producing—as Destructi*ve*. To this is added the syllable *ness*, to denote the abstract state. Instead of *ive*, the termination *ous* is found in the name of a sentiment, with *ness* added—as Conscientiou*s*-ness—to express the abstract quality. The names of the intellectual faculties require no explanation. The arrangement of the faculties usually adopted is that of Spurzheim, in the third edition of his 'Phrenology.'

The following is a representation of a bust of the human head in four points of view—front, side, back, and top—with the organs marked by numbers:—



AFFECTIVE.

I.—Propensities.	II.—Sentiments.
1. Amativeness.	10. Self-Esteem.
2. Philoprogenitiveness.	11. Love of Approbation.
3. Inhabitiveness and Concentrativeness.	12. Cautiousness.
4. Adhesiveness.	13. Benevolence.
5. Combativeness.	14. Veneration.
6. Destructiveness. [Alimentiveness.] [Love of Life.]	15. Firmness.
7. Secretiveness.	16. Conscientiousness.
8. Acquisitiveness.	17. Hope.
9. Constructiveness.	18. Wonder.
	19. Ideality.
	20. Wit, or Ludicrousness.
	21. Imitation.

INTELLECTUAL.

I.—PERCEPTIVE.

22. Individuality.
23. Form.
24. Size.
25. Weight.
26. Colouring.
27. Locality.
28. Number.
29. Order.
30. Eventuality.
31. Time.
32. Tune.
33. Language.

II.—REFLECTIVE.

34. Comparison.
35. Causality.

ORDER FIRST.—FEELINGS.

GENUS 1.—PROPENSITIES.

The propensities here classified and described are common to man and the lower animals.

No. 1.—Amativeness.

This organ (No. 1 on the marked bust) is situated immediately over the nape of the neck, and fills up the space between the ears behind, or rather between the mastoid processes, or projecting bones behind the ears. It generally forms a projection in that part, and gives a thickness to the neck when it is large, and a spareness when small. The cerebellum, or little brain, is, or at least contains, the organ of this propensity. It was Spurzheim's opinion, that the fact that the cerebellum is the organ of the amative propensity, was supported by a more overwhelming mass of evidence than any other truth known to him. Although Amativeness is the only ascertained function of the cerebellum, it is not impossible, from its size and structure, that it may include the organs of other functions; but no others have yet been discovered.

It is not necessary here to enter fully into the character of this faculty. As the basis of the domestic affections, it is one of great importance, and its regulation has ever been one of the prime objects of moral systems, laws, and institutions. For the evils and calamities, often amounting to national, to which it has occasionally led in its abuse, we need only refer to history. Dr Spurzheim held, with regard to this faculty, that, in education, a more candid and explicit mode of treating it might be advantageous; and much could be said in defence of his opinion.

No. 2.—Philoprogenitiveness.

This, in man as well as animals, is the feeling of the love of his offspring. It depends on no other faculty, as reason or benevolence; it is primitive; and in the female, who, for wise reasons, is gifted with it most strongly, its object, the infant, instantly rouses it to a high state of excitement. It is situated in the middle of the back of the head, and when large, projects like a portion of an ostrich egg. See fig. 3. It is small in fig. 4.

Fig. 3.

Fig. 4.

It was discovered by Dr Gall from its extreme protuberance in monkeys; and we have only to visit a zoological garden to see how that animal cherishes its young. All naturalists are agreed in this as a quality of the monkey species. The organ is one of the easiest to distinguish in the human head. Those who are flat and perpendicular there, instead of being delighted, are annoyed by children. It is generally smaller in males than in females, though sometimes found larger; and men so organised delight to carry about and nurse children. The feeling gives a tender sympathy generally with weakness and helplessness; and we find it often returned by the young themselves to the old and feeble. It is essential to a soft kind attendant on the sick, to a nursery-maid, and to a teacher of youth. The most savage races must have the impulse to protect their young, or they would become extinct. The organ, like the other cerebral organs, may become diseased; and insanity on the subject of children may be found in many asylums.

No. 3.—Inhabitiveness—Concentrativeness.

The organ is situated immediately above the preceding. Two of the most distinguished phrenologists, Spurzheim and Combe, disagreed about the function of this organ—at least about its *whole* function. Dr Gall did not discover its function at all; and Dr Spurzheim, observing it large in persons attached to their native place, or any place in which they had long dwelt, called it *Inhabitiveness*. Mr Combe does not disallow to it this function; and certainly man has such a faculty as attachment to place, often so strong as to render it impossible to move him from a particular spot by the most tempting inducements. The purpose of a faculty which prompts men to *settle* instead of roaming, which latter habit is inconsistent with agriculture, commerce, and civilisation, is obvious; *nostalgia*, or home-sickness, is the disease of the feeling. Mr Combe claims for it, however, a more extended sphere of action than love of place—one, at the same time, with which we have always thought love of place may be reconciled. He has observed the organ large in those who can detain continuously their feelings and ideas in their minds, while the feelings and ideas of others pass away like the images in a mirror, so that they are incapable of taking systematic views of a subject, or *concentrating* their powers to bear on one point. The first class of persons, in conversation, continue the same subject till it is exhausted, and pass gracefully to another connected with it: it is painful to converse with the others, whose unconnected thinking gives us the notion of what is vulgarly called *scatter-brains*. We must content ourselves with what is here said, and refer the reader for proofs and arguments, on either side, to the works of Mr Combe and Dr Spurzheim. The organ is stated as only probable, till further facts are obtained.

No. 4.—Adhesiveness.

This organ will be observed on the engraving of the marked bust to be situated on each side of No. 3; a little lower down than No. 3, but a little higher up than No. 2, at the middle of the posterior edge of the parietal bone. It was discovered by Gall, from being found very large, and of the same shape as on the bust, in a lady remarkable for the warmth and steadiness of her friendships; and was observed in so great a number of instances to accompany this propensity, and to be flat or hollow in those who never formed attachments, that he came to consider it as demonstrated. It attaches men, and even animals, to each other, and is the foundation of that pleasure which mankind feel, not only in bestowing, but receiving friendship. Acting in conjunction with Amativeness, it gives constancy and duration to the attachment of the married. Amativeness alone will not be found sufficient for this. Hence the frequent misery of sudden 'love marriages,' as they are called, founded on that single impulse. The feeling attaches many persons to pets, such as birds, dogs, rabbits, horses, and other animals, especially when combined with Philoprogenitiveness. With this combination, the girl lavishes caresses on her doll and on her little companions. Added to Nos. 1, 2, and 3, with which it is in immediate contact and ascertained fibrous connection in the brain, it completes what has been called the domestic group of organs, or the love of spouse, children, home, and the friends of home, as brothers, sisters, cousins, &c. The feeling is strongest in woman. Her friendships, speaking generally, are more ardent than man's. The faculty is not kindness or benevolence; it is instinctive attachment, often felt by those who are selfish in everything else—selfish even in their attachments. It is the faculty which prompts man to live in society; and its existence overturns the absurd theory of Rousseau and some others, that man

is solitary, and that mutual interest alone brings men to congregate with their fellow-men.

No. 5.—Combativeness.

The organ of this propensity is situated behind, and a little upwards from, the ear; anatomically, at the posterior-inferior angle of the parietal bone. Compare fig. 5, which is an outline of the skull of General Wurmser, at the organ 5, with fig. 6, that of a Cin-

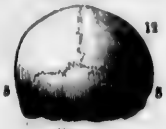


Fig. 5.

Fig. 6.

galese, at the same organ. No. 12 is the organ of Cautiousness, to be afterwards treated of. In this the difference is reversed between these two heads. Dr Gall discovered the organ by a vast number of observations on the heads of individuals whom he observed to be addicted to fighting. Dr Spurzheim extended its function to *contention* in general, whether physical or moral. The condition of the physical world, full of difficulties and dangers, seems in itself to make it necessary that man should possess a faculty giving the impulse to meet boldly, and press vigorously through, such impediments. In the mingled scene, also, which forms the moral world, such an impulse is not less needed. It is easy, therefore, to reconcile with our ideas of Divine wisdom and goodness the existence of this vehement quality of our nature, the true intent of which is expressed in the well-known adage of the Mantuan bard—'Ne cede malis, sed contra audentior ito' ['Do not give way to evils, but go the more daringly against them']. A small endowment of this faculty manifests itself in that over-gentle and indolent character which is easily aggressed upon, easily repelled by the appearance of difficulty and trouble, and which naturally seeks the shades and eddy-corners of life. To control and guide the propensity is one of the most delicate, but also most important, duties of the educator. When Combativeness is deranged, we have a violent and noisy, and often dangerous patient. The organ is held to be established.

No. 6.—Destructiveness.

This organ is situated on both sides of the head, immediately over the external opening of the ear, extending a little forward and backward from it, and rising a trifle above the top or upper flap of the ear. In fig. 7 the organ is large; in fig. 8 it is small. Dr

Fig. 7.

Fig. 8.

Gall discovered the organ by comparing the skulls of carnivorous with those of graminivorous animals, and afterwards by observing the same prominence in those of several murderers sent him for examination. Though generally considered as giving the impulse to kill and destroy, in man this propensity is shown to have, under the control of the higher sentiments and intellect, a legitimate sphere of exercise. Those roughnesses and difficulties in the physical world which have been shown to call for the exercise of Combativeness, that man may not sink under them, also appear to call for a faculty which may prompt to the destroying or repressing of them, so that the way may be cleared for the future. The annoyances and troubles of the moral world call in like manner for a faculty which may be always endeavouring to put an end to them. There are many animate and inanimate things, and many institutions and social arrangements which, though useful for a time, become in the end noxious, and require to be destroyed: the organ under notice appears to be that which is commissioned to do this duty. It prompts beasts and birds of prey to keep down the redundant breeds of the lower animals, and disposes man to 'kill' that he may 'eat.' It dictates the demolition and clearing away of obstructive objects of all kinds, and prompts Luthers and Mirabeaus to the extermination of bad systems. Anger, resentment, and indignation in all their shapes, likewise spring from this faculty. St Paul indicates its legitimate exercise in this class of its manifestations, in the words 'Be ye angry, and sin not.' A small endowment of this faculty is one of the elements of a 'soft' character. Persons so organised seem to want that which gives momentum to human operations, like an axe wanting in back weight. Those, on the other hand, who have a large endowment of Destructiveness, are generally marked by an energetic, and probably fierce and passionate character. If uncontrolled by moral feelings naturally strong, or cultivated into activity by education, they are apt to be violent and vindictive.

Alimentiveness—Love of Life.

Some of the recent phrenological works treat in this part of the order of the faculties, of a faculty of Alimentiveness, and also of another which follows—namely, Love of Life. The first being yet no more than *probable*, and the second only *conjectural*, they have no number allotted to them on the bust.

Alimentiveness is the desire of, or appetite for, food. In this feeling, as such, the stomach is not concerned: its functions are strictly confined to the reception and digestion of our food. But that the mind is concerned in our desire of food, is proved by many circumstances. Were desire anywhere but in the brain, there could be no permanent character in individuals—as the glutton, the epicure, the abstemious. Satisfied that appetite is a mental faculty, phrenologists have long been looking for its organ. Dr Hoppe of Copenhagen was the first to observe in those who manifested remarkably the gourmand or glutton a fulness in front of Destructiveness, in the *fossa zygomatica*, between the top of the ear and the temple. Its place is marked by a cross † on the side view of the bust. Many phrenologists have confirmed this by observation, so that the organ may now be said to be advanced from *conjectural* to *probable*.

The self-preservation involved in the *love of life* is certainly not accounted for by any known organ or combination of organs. Cautiousness is fear of injury, fear of death; but it is not love of life. This feeling is powerfully manifested by some when their life is in no danger, but who look upon the close of life as a very great evil. Others are so indifferent on the subject, as scarcely to care whether they live or die, but for the disagreeable effect the contemplation of death has upon their other faculties—such as leaving children unprovided, &c. Mr Combe thinks that the organ is situated in the base of the middle lobe of the brain, and that its development cannot be ascertained during life.

No. 7.—Secretiveness.

The organ of this faculty will be observed by its number on the bust, to be situated immediately above that of Destructiveness, at the inferior edge of the parietal bones, or in the middle of the side of the brain. Dr Gall observed this fulness in one of his companions remarkable for *finesse* and cunning, and for his sly expression. He observed it in another companion whose gait and manner were those of a cat watching a mouse. The first companion was honest, and only deceived for sport; the other, however, being deficient in moral restraint, turned out perfidious, and deceived his companions, his tutors, and his parents. An immense number of observations confirmatory of the soundness of Dr Gall's conclusions have led phrenologists to regard this organ as established. The legitimate use of

the faculty is to exercise that control over the outward manifestation of the other faculties which is necessary to a prudent reserve. Without it, and of course in those in whom the organ is small, and the manifestation weak, the feelings express themselves too plainly. Such individuals are too open and unsuspecting, and often all good taste and propriety are lost sight of by them in the exposure of their feelings. We may consider secretiveness as an instinct to conceal the feelings or thoughts, till reason shows it to be prudent to declare them. This control evidently was not left to reason alone, whose judgment would have proved too slow for the end intended. Concealment is given to animals to enable them both to avoid and to prey upon each other.

In abuse, the faculty leads to lying, hypocrisy, and fraud. When acting with Acquisitiveness, it forms the thief, cheat, and swindler. The organ is subject to disease, and the cunning insane are difficult to deal with. Disease here leads to the belief in plots and conspiracies formed against the patient, so common with the insane. The manifestations of Secretiveness ought to be watched in education, and carefully regulated; and the maxim impressed, that cunning is not wisdom.

No. 8.—Acquisitiveness.

The organ of this faculty is situated farther forward than, and a little above, Secretiveness, at the anterior-inferior angle of the parietal bone. The existence of a cerebral organ for the desire of property, bearing a proportion in size to the degree of that desire, decides the question of the feeling being a primitive *animal* power, and not, as Hutcheson, Stewart, and Brown have held it, the mere result of calculation, wealth being the means of gratifying all our other inclinations. Man feels as an animal before he reasons. Lord Kames, whom the *regular* metaphysicians of his time considered as admitting too many faculties, takes, by sagacious anticipation—as he did when he recognised a hunting and killing propensity in man, phrenologically Destructiveness—the phrenological view of Acquisitiveness as primitive, and calls it 'the hoarding appetite.' This theory of it alone explains the miser's desire to accumulate, without ever putting his wealth to the use required by the metaphysicians above named, the purchase of enjoyment, the gratification of the other faculties. The faculty of Acquisitiveness could not, and no faculty could, be given to man by his Creator for any mean, grovelling, and immoral purpose; accordingly, when we consider it aright, we recognise in it the dignity of the greatest utility. In a word, it is the faculty through whose impulse man accumulates *capital*, and nations are rendered rich, great, and powerful. Without the faculty, man would be content to satisfy his daily wants, although even in this he would fail; but the surplus which, under the impulse of this faculty, he contributes to the store of wealth which accumulates from generation to generation, would not exist. Under proper regulation, then, the faculty is of the greatest value to man; by means of it he 'gathers up the fragments, that nothing may be lost.' Excessive pursuit of wealth is, however, an abuse of the faculty, and too much the vice of civilisation, when it advances, as it has hitherto done, without adequate moral improvement.

The organ is often diseased; so that those who are insane in this faculty, without any temptation arising from their circumstances, which are often above want, and even prosperous, pilfer everything of value, and often of no value, which comes in their way. Again, many incorrigible thieves in lower life, on whom the punishments of the law fail to have any effect, are diseased in this organ. Phrenology thus demonstrates that many supposed criminals are in truth *patients*, and ought to be treated as such.

No. 9.—Constructiveness.

The situation of this organ is in the fore part of the temples, at the frontal bone, above the spheno-temporal suture. It is sometimes found higher up than its usual position; but a little practice familiarises the observer with its appearance. The faculty of which this organ is the instrument, is the power of mechanically making, and constructing, by changing the forms of matter. Many of the inferior animals possess it; as the bee, birds, and insects. Some savages have it in such small endowment, as never to have built huts or made clothes, or even the simplest instruments for catching fish. Such are the New Hollanders, in whom the organ appears very slightly developed. Drs Gall and Spurzheim verified this organ by a vast number of instances—in mechanicians, architects, designers, sculptors, and even painters. Metaphysicians do not recognise a primitive faculty of Constructiveness, but consider mechanical skill to be the result of reason. This is an error which the slightest observation contradicts. Were it true, say the advocates of phrenology, the most sagacious animals would be the most constructive; yet the horse, the dog, the elephant, never construct; while the bee, the beaver, and many birds and insects, perform works by this instinct which excite our wonder. Very young children, long before reason could assist them, have manifested proficiency in making models, drawing, cutting with scissors, &c. Even idiots are often skilful constructors, witness many of the Crétins of the Alps. Intellect is, however, important to the range, variety, and application of human Constructiveness; while the Constructiveness of the inferior animals is limited to one invariable result.

The use of this faculty is obvious. Physical nature consists of raw material, in scarcely any instance fitted for the convenience and accommodation of man. Constructiveness prompts him to form and fashion; and he continues to do so, advancing—which the inferior animals never do—from building the rude wigwam and making the stone-hatchet, up to achieving the palace, the steam-engine, and the spinning machine.

GENUS II.—SENTIMENTS.

Mr Combe introduces this branch of the subject thus:—'This genus of faculties embraces certain feelings which correspond to the "emotions" of the metaphysicians. They differ from intellectual perception in being accompanied with a peculiar vividness, which every one understands, but which it is impossible to express by any verbal definition. They may be excited by the presentment of the external objects naturally related to them, as danger is to fear, or august appearances to reverence, or by the spontaneous activity of the organs. Dr Spurzheim has named these faculties *Sentiments*, because they produce an emotion or feeling of a certain kind, joined with a propensity to act; but, as shown in the Appendix No. II., the detail of his classification is here by no means accurate. Several of them are common to man and the lower animals; others are peculiar to man. The former, styled the Inferior or Lower Sentiments, shall be first treated of.' The argument referred to by Mr Combe in his appendix, is an abridgment of a paper by Mr Robert Cox, in the 'Phrenological Journal' (vol. x. p. 154), in which he endeavours to show that, on the one hand, several of the propensities are accompanied by emotions, as well as inclinations to act, and on the other, several of the sentiments have likewise both qualities.

I. SENTIMENTS COMMON TO MAN AND THE LOWER ANIMALS.

No. 10.—Self-Esteem.

The situation of this organ is at the top of the back of the head, at the centre; forming, as it were, the curve or turn between the back and top of the head. When it is large, the head rises far upward and backward from the ear, in the direction of the organ. It is large in fig. 9, and small in fig. 10. The legitimate use of the faculty of Self-Esteem is that degree of self-complacency which enhances the pleasures of life, and which gives the individual confidence in his own powers, and leads him to apply them to the best

advantage. It is sometimes called proper pride, or self-respect, in which form it aids the moral sentiments in resisting temptations to vice and self-degradation: this is called being *above* doing a criminal, a

Fig. 9. Fig. 10.

vicious, or a mean action. Its deficiency renders an individual too humble, and the world take him at his word, and push him aside. In large and uncontrolled endowment, it produces great abuses, and causes much annoyance and often misery to others. In children it is pettishness, frowardness, and self-will, and produces disobedience. In adults it gives arrogance, superciliousness, and selfishness. In nations, the feeling shows itself in national pride and boasting. This produces contempt of other nations, and leads to international jealousies and hatreds, the origin of almost all the wars that have disgraced and desolated the world. Self-Esteem occupies the individual so intensely with self, that he is insensible to all interests but his own; everything is seen by him through the medium of self. The first thought, when a proposal is made, is, 'How will this affect *me?*' Love of Approbation is often useful by subjecting the individual to some degree of dependence on the opinion of others, to moderate the intensity, the exclusiveness, of Self-Esteem. Without this counterpoise, the self-esteeming person becomes a self-erected standard of opinions, manners, and morals. Discussions of character, with vilifying remarks, come from a large Self-Esteem, and that want of candour and fairness which is the result of an inferior endowment of Conscientiousness. Envy, which includes hatred, is Self-Esteem rousing Destructiveness; with deficient Benevolence and Conscientiousness, the envious could injure a fortunate individual merely because of his better fortune. It is a modification of invidiousness, although directed against things, and not persons, to affect to undervalue everything one sees—in other words, never to seem pleased—in order to reap from this petty exhibition a fancied consequence, extremely gratifying to a large and active Self-Esteem. A large development of the organ renders its possessors what is called *touchy*—impatient of reproof, and irritated by it, however just, as if it were a positive injury. A *small* endowment of the faculty is exceedingly rare.

Self-Esteem has a marked natural language. When powerful, the head is carried high, and reclining backwards, an attitude well known to stage kings and lords. The manner is cold, haughty, and repulsive; and two self-esteeming persons meeting, repel each other like the contrary poles of magnets. Dr Reid and Mr Stewart acknowledge this sentiment under the name of the Desire of Power. Dr Thomas Brown calls it Pride. It is evident that these are narrow and partial views of the feeling—one or two only of its manifestations. The organ and feeling are apparently possessed by some of the inferior animals, such as the turkey-cock, peacock, horse, &c. Lord Kames observed that the 'master-ox' must have the lead, else he will not work. Self-Esteem is found insane perhaps more than any other faculty, and then shows itself in extravagant notions of self-importance. Such maniacs are kings, emperors, and even the Supreme Being. The organ is generally larger in men than in women; and more men are insane from pride than women.

No. 11.—Love of Approbation.

This organ is situated on each side, close to Self-Esteem, and commences about half an inch from the lambdoidal suture. It gives, when large, a marked fulness to the upper part of the back of the head. The faculty is the desire of approbation, admiration, praise, and fame. Its legitimate function is regard to reputation and character, and it gives the sentiment of shame. It is an excellent guard upon morals as well as manners. The loss of character, to those largely endowed with this feeling, is worse than death. If the moral sentiments be strong, this sentiment will desire honest fame, and in the line, too, of the prevailing faculties—as poet, painter, orator, warrior, statesman. The love of glory is a passion with many, and has deluged the world with blood in all ages. The decorations, orders, stars, garters, of civilisation, and the tatooing, nose-boring, and pluming of savage life, all spring from Love of Approbation. When the propensities predominate, the vain man will be pleased to be thought the best fighter or greatest drinker among his acquaintance. A due endowment of this faculty is essential to an amiable character. 'It gives,' says Mr Combe, 'the desire to be agreeable to others; it is the drill-sergeant of society, and admonishes us when we deviate too widely from the line of march of our fellows; it induces us to suppress numberless little manifestations of selfishness, and to restrain many peculiarities of temper and disposition, from the dread of incurring disapprobation by giving offence; it is the butt upon which wit strikes, when, by means of ridicule, it drives us from our follies.' What the world will think and say, is uppermost in the mind when Love of Approbation is too strong. A youth in whom it is powerful, cannot do this thing or the other because everybody will look at him, or wonder at him. The young are extremely sensitive on this point, especially in relation to those of their own age. The admonitions of the parent or teacher are nothing with them in comparison with the jeering of their companions. Ridicule is intolerable to a large Love of Approbation at any age. Hence the poet's thought, 'the world's dread laugh which scarce the stern philosopher can scorn.' Combined with Self-Esteem, it creates the impression that the world are all busy thinking of us, instead of themselves; which last is the truth. This excess of the feeling subverts all independence. The opinion of others is the unhappy individual's rule of morals, taste, religion, even philosophy. As this faculty, and that of Self-Esteem in abuse, are the cause of much evil, both to the individual and others, education ought to endeavour to moderate their activity.

The faculty, unless kept in subordination by a very large and vigilant Conscientiousness, prompts to all the conventional insincerities and flatteries of society, from the dread that the truth will offend Self-Esteem, and draw down on the teller of it disapprobation. When Secretiveness is large, and Conscientiousness small, Love of Approbation is profuse in the unmeaning compliments of society. These compliments many people scorn only when applied to others, but take more complacently when addressed to themselves; their Self-Esteem supporting them, and persuading them that these compliments *have* a meaning, and value too, when *they* are the objects of them. Much of the acutest suffering of life consists in nothing else but wounded Love of Approbation.

Shamelessness is the effect of the want of this faculty, often observed in criminals. It is a great defect in character; the individual is beyond the salutary government of the feeling; he cares not for the opinion of others, and laughs equally at their censure or approbation. The educator finds this negation very difficult to deal with, inasmuch as one engine, with which he might otherwise legitimately work, is useless to him. His pupil will not *draw* by Love of Approbation. This defect aids the impudent, who have a purpose to serve. Their importunity is often boundless and untiring. No

repulses affect them, no indignities touch them, so long as absolute personal violence is not applied to their intrusions. The *blush* is the natural language of shame—one of the feelings of powerful and sensitive Love of Approbation. The organ is oftener found insane in women than in men, as in women it is more active than in the other sex generally. The patients whose Love of Approbation is diseased, are not solemn, haughty, and irascible, like the monarchs of Self-Esteem. They are generally in a bustle of display, overpowering the listener with details of their merits, their talents, their works, and even their beauty.

No. 12.—Cautiousness.

The organ of this faculty is situated about the middle of the parietal bone on both sides. Dr Gall discovered it by first observing the prominence large in two individuals who positively harassed him with their doubts, fears, hesitations, and precautions. When he observed this cerebral mark for the peculiarity, he confirmed it by numberless subsequent observations. No organ is more easily observed than Cautiousness. It is evident to the eye as well as to the hand, and there is none of which the concomitant mental feeling may be predicted with greater confidence.

It has been said that *fear* is the fundamental feeling of this faculty: we doubt this. Fear is a disagreeable affection of the faculty, for it *is* one of its feelings, and we are disposed to think that the disagreeable or painful is not the root of any of our faculties. We are not necessarily conscious of the feeling of fear while we are taking the most circumspect precautions for our safety, and it is just when we have taken these precautions that fear is excluded. In our opinion, Cautiousness expresses the feeling better than Fear. The words *foresight* or *circumspection* are too intellectual for it; for it does not foresee or look around; it merely feels blindly, and stimulates the intellect to take the means of insuring safety: its motto is, 'Take care.' It is an important element in prudence, which places the individual on his guard, and warns him not to be rash in his moral, as well as his physical movements. In general, the organ is large in children—a wise and beneficent provision for their self-protection.

The symptoms of a very large endowment will be timidity, fears, and even imaginary terrors, especially in dreams. The organ is often diseased, and then produces causeless dread of evil, despondency, and often suicide. In the heads of suicides the organ is usually large, and Hope deficient, Destructiveness also being of course large. Persons with the organ diseased will often shrink, as if the house were about to fall over them, or a bridge under them. Those who do not distinguish feeling from thinking, imagine that such persons may be reasoned into a dismissal of their fears, on being shown that they are groundless; but if, as is demonstrable, the feeling results from a portion of brain being positively diseased, it would be as rational to attempt to reason a person out of the pain he suffers from a bodily wound or sore. The effect of fear, or sudden and violent excitement of Cautiousness, in producing mental derangement, and all sorts of nervous disease, is well known. Practical jokes, harmlessly intended to frighten, have often fearfully overshot their aim, and produced lasting insanity.

II. SUPERIOR SENTIMENTS, PROPER TO MAN.

We have hitherto considered the faculties which phrenologists describe as common to man and the lower animals; we are now to treat of those superior sentiments which they consider as peculiar to man. The organs of these sentiments lie in the superior region of the brain. That they are all of them entirely wanting in animals, is an opinion which the phrenologists will yet, probably, have to reconsider; but we deem it best in the meantime to follow the generally received view. It may only be remarked, that while the convolutions of the brain which form Veneration, Conscientiousness, and Hope, are not found in animals, traces of the convolutions forming Benevolence and Imitation do appear; and these two last are the powers of this class with which it seems most likely that animals are endowed.

No. 13.—Benevolence.

The organ of this sentiment is situated at the upper part of the frontal bone, immediately before the fontanel, in the middle of the top of the forehead, where it turns to form part of the top of the head, or coronal surface. It is easily distinguished; and when large (see fig. 11), gives a round elevated swell to that region. When the organ is small (fig. 12), the forehead or top-front is low, flat, and retreating. We cannot blame the

Fig. 11.

Fig. 12.

unfortunate individual so organised, seeing that he did not make himself; but we are so constituted as instinctively to shrink from him, as deficient in one of the chief ornaments of human nature—the faculty of kindness and brotherly love.

The faculty of Benevolence gives more than compassion for, and a desire to relieve, suffering; it gives a wish that others should be positively happy; prompts to active, laborious, and continued exertions; and, unless Acquisitiveness be very large and powerful, to liberal giving to promote its favourite object. It differs essentially in its charity, 'which suffereth long, and is kind,' 'and vaunteth not itself,' from that which springs from Love of Approbation. Yet to this last selfish faculty how often is it necessary to appeal when funds are wanted for benevolent purposes! Hence the *published* lists of subscribers' names; hence, too, the appeals to other selfish faculties by balls, plays, &c. for contributions to relieve suffering, as if it were to be charmed away by dancing and music. The Samaritan's conduct was pure benevolence. The faculty, like sunshine, lights as well as warms the whole of social intercourse. Those who have the organ small are not on that account cruel; for cruelty is the result of a positive faculty—Destructiveness: they are merely indifferent to others' suffering, so that their Destructiveness meets with no check. Hare the murderer was an example. He required no effort, no drowning influence of liquor, as even the wretched Burke did, to steel him against the cries and struggles of his victims. See his head, fig. 2, contrasted with a benevolent development, fig. 1. Benevolence is the chief ground of an individual's popularity; when added to integrity and talent, it renders a public man justly an idol. The martial fame of Henry IV. of France has descended in the mild company of the history of his benevolence; and his memory is yet, after nearly three centuries, dear to the French people. The air that bears his name is the first they call for in their theatres. Unregulated by Conscientiousness and Intellect, Benevolence degenerates into abuse, and becomes profusion and facility. Such an endowment gives indiscriminate alms, without reflecting that it is thereby probably encouraging fraud and crime. When Conscientiousness is weaker than Benevolence, we see the individual generous before he is just—making expensive presents, and leaving his tradesmen unpaid. Benevolence often coexists with Destructiveness, although this has been denied as an inconsistency in nature. How many individuals known to us are at once kind-hearted and hasty and irascible!

No. 14.—Veneration.

The organ of this faculty occupies the centre of the coronal region just at the fontanel—the centre of the top of the head. It was discovered by Dr Gall in the

pious and devout; and is very obvious in the bald head of the monk of real sentiment and not of mere interest. The function of the faculty is the sentiment of veneration, or deference in general for superiority, for greatness, and goodness. Its highest object is the Deity. It is remarkable in how many instances the painters of sacred subjects have given large development of this organ in the heads of their apostles and saints—no doubt because the pious individuals whom they would naturally select as studies for such characters possessed the organ large. Veneration has no especial object: it finds appropriate exercise with regard to *whatever is deemed superior*. One man may venerate what another treats with indifference, because his understanding leads him to consider that particular object as superior, while his neighbour deems it upon his own level, or beneath it. But any man with a large endowment of the organ will have a tendency to consider things as superior: he will be naturally disposed to look up, and not to look down. Self-Esteem is a positive faculty opposite to Veneration. The one prompts to a regard for, and appreciation of, self; the other to a regard for, and appreciation of, others, or something above self. He in whom there is much Veneration, with a moderate or defective Self-Esteem, will always be disposed to think well of what other persons do, and to put himself under their guidance and advice, which he will scrupulously follow, although his own understanding might have suggested better courses. Veneration is the basis of the feeling of loyalty: it is a main element in such political parties as the Jacobites of England and the Carlists of France. We see it irrationally exercised in the savage with regard to his idols of stone and wood, and in civilised society with regard to the mere idea of rank unattended by worth. It is, on the other hand, rationally exercised with regard to persons of real excellence, and those who have been invested with important functions for the benefit of society.

Veneration, having the Deity for its highest object, forms an element in the purest and most exalted religious feeling. But while there can be no perfectly pious man without it, we are bound to admit that individuals are often found passing for very fair religious characters, in whom Veneration is by no means conspicuous. Such show little reverence or care in the handling of Divine things, and often address the Deity in their prayers in a style calculated to shock others by its familiarity. So liable is the organ of Veneration to disease, that devotional exaltation is well known to be one of the most common forms of insanity. The religiously insane abound in the asylums. Drs Gall and Spurzheim adduce many examples, and in all of them the organ of Veneration was found large.

No. 15.—Firmness.

The organ of this faculty occupies the top of the head, behind Veneration, in the middle line. It is a faculty of peculiar character. Dr Gall held that it was neither an inclination nor a power, but a *manière d'être*—a mode of existing or being firm, resolute, and determined. He who is deficient in the faculty is the sport of circumstances and impressions. Dr Spurzheim says that Firmness is apt to be mistaken for Will, because those that have the organ large are prone to say 'I will,' and 'I wont,' that being the natural language of determination; but the feeling is quite different from what is properly called the Will. It gives fortitude, constancy, perseverance, and determination; and when too powerful, it produces obstinacy, stubbornness, and infatuation. The organ will be found large in obstinate and intractable children. Firmness has no relation to external objects; its influence is within the mind, and adds a quality of endurance to each or all of the other faculties. For example, it renders Combativeness determined bravery; Conscientiousness inflexible integrity; and so with others. With Self-Esteem it renders the individual absolutely impracticable. The want of it is a great defect in character: it is unsteadiness of purpose. Fig. 13 is that of the head of a lady who had several houses taken because she could not *determine* in which she should live: her Conscientiousness (marked 16) will be observed large, and this feeling she manifested by faithfully and punctually paying the rents of

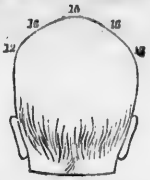


Fig. 13.

Fig. 14.

them all. The English soldier has more of Firmness than the French, although in courage and spirit they are equal. The organ is large in the torture-enduring American Indian. In fig. 14 it is small; in 13, large.

No. 16.—Conscientiousness.

The organ of this sentiment is situated on each side of the organ of Firmness, between the latter organ and that of Cautiousness. Dr Spurzheim discovered the organ, and thereby incalculably benefited mental and moral science. Previously, metaphysicians differed in opinion as to the existence of a moral sense—a primitive instinctive feeling of truth and justice. Hobbes and Mandeville held justice to be a selfish calculation. Even Paley considered it influenced by the hope of eternal reward, and therefore no better than a selfish calculation. Adam Smith placed the standard of moral approbation in sympathy, Hume in utility, Clarke in the fitness of things; while Hutcheson, Cudworth, Kames, Reid, Stewart, and Brown all contend for a *faculty* which produces the sentiment of right and wrong, independently of all other considerations. Without this faculty, the sentiments which guard, or rather constitute, morality, would be incomplete. Benevolence prompts to kindness, and is offended with cruelty; Veneration induces piety, and is shocked with blasphemy; but neither of these faculties gives the perception or feeling of obligation, duty, incumbency, truth—in a word, justice. When, however, Conscientiousness is superadded, the defect is supplied, and morality completed—that morality which Scripture recognises in the precept 'to do *justly*, to love *mercy*, and to walk humbly with *God*.'

Conscientiousness gives the emotion of justice, but intellect is necessary to show on which side justice lies. The judge must hear both sides before deciding, and his very wish to be just will prompt him to do so. This faculty regulates all the other faculties by its rigid rules. It says to them, 'thus far and no farther, or you will do injustice.' Benevolence and Veneration themselves require its guardianship, to prevent the one from running into generosity without justice, the other into bigotry, fanaticism, and persecution. Conscientiousness not only curbs our faculties when too powerful, but stimulates those that are too weak, and prompts us to duty even against strong inclinations. To cultivate it in children is most important. No organisation, however favourable, compensates a want here; yet phrenologists are forced to confess that it is not the largest organ in the great majority of brains, and hence the injustice that is, silently, as well as openly, at work in society. The training of it by practical exercise in infant education is explained in the volume on 'Infant Education' in *Chambers's Educational Course*. Conscientiousness not only prompts to honesty and truth, in opposition to common fraud and falsehood, but, more delicately still, renders the individual who is blessed with it in large measure candid and fair in his judgments of the conduct, opinions, and talents of others. It pays debts, keeps appointments, performs promises, and gives a beautiful consistency and trustworthiness to the whole conduct, which secures the respect, and when blended with Benevolence, the love, of

all within the range of its influence. Without Benevolence, it is apt to be too severe and stringent. When Conscientiousness is weak, or when, as happens in perfectly '*honest*' and '*honourable*' people, in the broad sense of these terms, it is not something more than average in its power, the defect will run through the whole conduct and judgments of an individual. We often hear people complaining that a particular friend is '*uncertain*.' This word expresses concisely the defect of Conscientiousness above described.

The existence of Conscientiousness as an independent element in the human constitution, renders intelligible many supposed inconsistencies in human conduct—that a man, for instance, will be kind, forgiving, even devout, and yet not just. It is a great mistake with regard to those who, after many years of sanctimonious professions, are detected in dishonest acts, to say that they must have been all along mere hypocrites. It is quite possible that many of their religious feelings and convictions may have been sincere, but only insufficient in force to compensate for the lack of direct Conscientiousness. Conscientiousness gives remorse when the individual has been tempted to sin. The organ is larger in some nations than others. It is larger generally in Europeans than in Asiatics and Africans; very generally it is deficient in the savage brain. It evidently grows in civilisation; indeed, it constitutes an essential of civilisation. The organ is often found diseased, and the insanity consists in morbid self-reproach, imaginary debts, and unfounded belief in merited punishment.

No. 17.—Hope.

The organ of this faculty has its place on each side of Veneration, partly under the frontal, and partly under the parietal bone. It was discovered by Spurzheim, but never admitted by Gall, who considered Hope as a function of every faculty that *desires*. To this Dr Spurzheim answered, that we desire much of which we have no hope; a criminal on the scaffold intensely desires life, but has no hope of it. Dr Spurzheim considered Hope a faculty *sui generis*, producing hope, in general, of good, or gratification to the other faculties; and, by careful observation in nature, found the organ in the situation just described. It seems to have been given to man to make him happy. It produces gaiety and cheerfulness, looks on the sunny side of everything, and paints the future with bright colours. When not regulated by the intellect, Hope leads to rash speculation, and, in combination with Acquisitiveness, to gambling, both at the gaming-table and in the counting-house. It tends to render the individual credulous, and often indolent.

No. 18.—Wonder.

The organ of this faculty is situated on each side of that of Benevolence, with one other organ, that of Imitation, interposed. Dr Gall discovered it by observing it large in the seers of visions and dreamers of dreams, and in those who loved to dwell on the marvellous. Persons with the faculty powerful are fond of news, especially if striking and wonderful, and are always expressing astonishment; their reading is much in the regions of the marvellous, tales of wonder, of enchanters, ghosts, and witches. When the sentiment is excessive or diseased, it produces that peculiar fanaticism which attempts miracles, and with Language active, speaks with unknown tongues. It draws the ignorant and fanatically-inclined, who have the organ large, with ease by its pretensions; hence the numerous followers of Johanna Southcote. Thom, and Edward Irving. Mr Combe says of the last—'I examined his head before he was established as a preacher, and when his peculiarities were unknown, and observed that the organs of Wonder and Self-Esteem were very large. They gave a tinge to his whole public life. The organs of Benevolence, Conscientiousness, Veneration, and Intellect were also amply developed, so that he possessed the natural elements of the Christian character in great strength, but their direction was rendered unprofitable by the predominance of Wonder and Self-Esteem.' The general function of the organ is held to be ascertained, but the metaphysical analysis is still far from being perfect.

No. 19.—Ideality.

The organ of this faculty is situated farther down, but close to that of Wonder, along the temporal ridge of the frontal bone. Dr Gall discovered it in the busts and portraits of deceased, and in the heads of a great number of living, poets. This confirmed to him the old classical adage, that the poet is born, not made; in other words, that his talent is the result of a primitive faculty. Dr Gall called it the organ of Poetry. Dr Spurzheim corrected this, and gave it the elegant name it now bears; which has, as well as others of the expressive names of the phrenological organs, been adopted into ordinary language.

The faculty delights in the perfect, the exquisite, the *beau-ideal*—something beyond the scenes of reality—something in the regions of romance and fancy—of the beautiful and the sublime. Those writers and speakers who possess it large adorn all they say or write with its vivid inspirations. It is the organ of imagery. The sermons of Chalmers owe much of their charms to it, and the organ was very large in his head. Shakspeare created such beings as Ariel, Oberon, and all the imaginings of the 'Tempest' and 'Midsummer Night's Dream,' under its influence. The faculty renders conversation elevated, animated, and eloquent.

Nature abounds in beauty and splendour to gratify Ideality—a proof of pure beneficence in the Creator; for it is a pleasure of unmixed gratuity, if we may so speak: man might have been created without it; but Divine goodness superadded that, the most exquisite, to his other enjoyments. The organ is small in criminals and other coarse and brutal characters, for it is essential to refinement. It prompts to elegance and ornament in dress and furniture, and gives a taste for poetry, painting, statuary, and architecture. A point of interrogation is placed on the bust on the back part of the region of this organ, conjectured to be a different organ, but one allied to Ideality. Some phrenologists have considered it the organ of the Sublime, from its touching on Cautiousness, which the grand, at least the terrific grand, in some degree affects. A writer in the 'Phrenological Journal' suggests the love of the past as its function. The existence of the faculty of Ideality demonstrates that the sentiment of beauty is an original emotion of the mind, and settles the controversy in which Professor Stewart, Lord Jeffrey, Dr Brown, and others took a part, as to the origin of our perception of beauty. The organ is held as established.

No. 20.—Wit, or the Ludicrous.

The organ of this faculty is situated before, and a little lower than that of Ideality. When large, it gives a breadth to the upper region of the forehead. In the portraits of Sterne, his forefinger is represented resting on this angle of the forehead, which in him was very large, and the mental manifestation powerful.

The phrenological writers have discussed at great length, and with not a little controversy, the metaphysical nature or analysis of this faculty. We do not require to follow them into this inquiry, as most of them are agreed that by means of this faculty we see and enjoy the *ludicrous*, and experience the emotion of laughter. Man is the only laughing animal, and the impulse and its result are too well-marked characteristics not to be the manifestations of a special faculty. Dr Beattie's theory is the most satisfactory of any—that the objects of the ludicrous are incongruities, with a certain mixture of congruity. When this organ is large, the individual both enjoys and creates the ludicrous, and is apt to give a ludicrous turn to everything that passes through his mind. For the discussions in which Mr Scott, Mr Watson, and Mr Schwartz of Stockholm have taken a part, as well as for the opinions of Gall,

Spurzheim, and Combe, we must refer to Mr Combe's 'System' (4th edition, p.416). We may observe that Mr Scott and Mr Hewett Watson consider the organ No. 20 as that of an intellectual, and not an affective faculty. Mr Scott views it as the faculty by which we discriminate or observe differences; and this, by much ingenious reasoning, he is inclined to hold to be the function of a different faculty from that by which we perceive resemblances. Mr Watson thinks the function of No. 20 is to investigate what may be called intrinsicalities—the intrinsic nature of things. Mr Combe thinks the facts adduced by Mr Watson make it probable that there is a faculty for this power, but that it is not No. 20. Dr Spurzheim unsettles both Mr Scott's and Mr Watson's theories anatomically, by showing that the portion of brain is in the same region with Ideality, and is therefore the organ of an affective, and not an intellectual faculty. He farther holds, that the same faculty which perceives resemblances perceives differences; and both he and Mr Combe, observing that all those who deal largely in the ludicrous have the Organ 20 large, conclude, that whatever may be the object or objects of the ludicrous in nature—whether something specific, like colour or odour in a rose, or some *condition* of things, which in themselves are not necessarily ludicrous—there is a mental sentiment or emotion which excites to laughter. No. 20 is the organ essentially of this emotion, and so far they hold it established.

No. 21.—Imitation.

This organ is situated on each side of that of Benevolence. Dr Gall found the protuberance accompanied by instinctive, and often irrepressible mimicry. The purpose of the faculty is to enable the young to learn from the more advanced, and keep a convenient uniformity in the manners and externals of society. Celebrated players always possess it largely, and by it imitate the supposed manner, and even feel the sentiments, of their characters. The Imitative arts depend on this faculty; and its organ is found large, accordingly, in painters and sculptors of eminence. What a fund of amusement and delight comes from the group of faculties whose organs are all in this one region of the head, well named 'The Poet's Corner'—namely Ideality, Wonder, Imitation, Wit or the Ludicrous, Time, and Tune! The faculty of Imitation has been recognised in a state of disease when the impulse to mimic is beyond the individual's control. Pinel makes mention of an idiot girl who was affected in this way. Parrots, monkeys, and the mocking-bird imitate and mimic. The last-mentioned often attracts other birds by the cries of their own kind; and then waggishly, as it were, scares them away with the cry of some bird they dread. The organ is established.

ORDER SECOND.—INTELLECTUAL FACULTIES.

By these faculties man and animals perceive or gain knowledge of the external world, and likewise of their own mental operations. The object of the faculties is to know what exists, and to perceive qualities and relations. Dr Spurzheim divided them into three genera:—1. The External Senses; 2. The Internal Senses, or Perceptive Faculties, which procure knowledge of external objects, their physical qualities and relations; 3. The Reflecting Faculties.

GENUS I.—EXTERNAL SENSES.

By these, man and the inferior animals are brought into communication with the external material world. Much metaphysical acumen has been wasted, and much nonsense written, about the senses. Before phrenology discovered *internal* faculties, of which the senses are the ministers—they themselves giving only passive impressions called sensations, but forming no ideas—the senses were considered the *sole* sources of our knowledge. They are necessary to that knowledge, but would never of themselves have completed it. By each sense we discover some quality of material nature. The senses, as generally received, are five in number—*Touch*, *Taste*, *Smell*, *Hearing*, and *Sight*. There are certainly two more—namely, the *sense of Hunger* and *Thirst*, and the *Muscular Sense*, or that by which we feel the state of our muscles as acted upon by gravitation and the resistance of matter. Without this last sense we could not keep our balance, or suit our movements to the laws of the mechanical world. Dr Thomas Brown conjectured this sense many years ago, and Sir Charles Bell has thrown much light on it by proving that separate roots, afterwards joining in one apparent nerve, but evidently being two, gave muscular motion and muscular sensation. For further information on this subject, see the preceding sheet.

GENUS II.—INTELLECTUAL FACULTIES, WHICH PROCURE KNOWLEDGE OF EXTERNAL OBJECTS, OF THEIR PHYSICAL QUALITIES, AND VARIOUS RELATIONS.

These faculties correspond in some degree with the perceptive powers of the metaphysicians, and form ideas.

No. 22.—Individuality.

The organ of this faculty is situated in the middle of the lower part of the forehead, immediately above the top of the nose. It takes cognisance of individual existences—of a horse, for example. Other knowing faculties respectively observe the form, colour, size, and weight of the horse, but a faculty was necessary to unite all these, and give the individual idea of a horse. It furnishes the substratum which has form, colour, &c.—an old desideratum of the metaphysicians. Individuality is the storehouse of knowledge of things that simply *exist*. It is often large without being accompanied by reflecting power; when this is the case, the individual has been compared to an encyclopædia, full of facts, but unable to reason from them. All the objects of Individuality are *noun substantives*. Verbs and adjectives are the perceptions of other faculties to be afterwards noticed. As Individuality merely observes existences, without regard to their modes of action, it is the faculty of the naturalist. Those who possess it large and active, observe the minutest objects; nothing escapes them, and they remember even the minutest objects so well, that they will miss them when taken away. On the contrary, those who have it small, observe nothing, and give the most imperfect account of the objects which have been in their way. In the artist, the faculty gives great minuteness of detail, and with Imitation and Form, great power of hitting likenesses in portrait-painting. The faculty prompts to personification of abstract ideas—as Fame, Envy, Wisdom, Folly. The organ is established: the metaphysical analysis of the faculty requires farther inquiry.

No. 23.—Form.

This organ is situated on each side of, and close to, the *crista galli*, and occupies the space between the eyes. In those who have it large, the eyes are wide asunder, and *vice versâ*. Dr Gall discovered the organ in persons remarkable for recognising faces after long intervals, and although perhaps only once and briefly seen. The bust of George III. furnishes the best example in the Phrenological Society's collection; and it is well known that he never forgot a face. Townsend, the famous Bow Street officer, had the same talent, one most essential to his office. As every material object must have a form, regular or irregular, this faculty was given to man and animals to perceive forms, and they could not exist without it. When large, it constitutes an essential element in a talent for drawing, but requires Size and Constructiveness to perfect the talent. Forms are capable of great beauty, and of affording much pleasure, and in nothing more than in the human figure. Many persons who have the organ of Form large, connect their words and ideas with forms, and these often fanciful and of their own creating. Mineralogists and crystallographers generally possess this power in large endowment. The celebrated Cuvier ascribed much of his success in comparative anatomy to his large organ

of Form. Decandolle mentions, that 'his (Cuvier's) memory was particularly remarkable in what related to forms, considered in the widest sense of that word; the figure of an animal seen in reality or in drawing, never left his mind, and served him as a point of comparison for all similar objects.'

No. 24.—Size.

Every object has size or dimension. Hence a faculty is necessary to cognize this quality. The supposed organ is situated at the inner extremities of the eyebrows, where they turn upon the nose. A perception of Size is important to our movements and actions, and essential to our safety. There is no accuracy in drawing or perspective without this organ. Sir George Mackenzie thinks that the faculty of Size, as it cognizes dimension of every kind, whether in length, breadth, thickness, height, depth, or distance, is that faculty whereby we perceive *space* in general, analogous to the faculty of Time, by which we perceive time. Different individuals manifest different degrees of the power of perceiving size. Some seem not to possess the power of estimating distance or dimension, while others can draw a circle without compasses, and find the centre of one already drawn with the greatest accuracy.

No. 25.—Weight.

Weight is a quality of matter quite distinct from all its other qualities. The weight of any material object is only another name for its degree of gravitating tendency—its attractibility to the earth. A power to perceive the different degrees of this attraction is essential to man's movements, safety, and even existence. There must be a faculty for that perception, and that faculty must have a cerebral instrument or organ. Phrenologists have generally localised that organ in the superorbitar ridge or eyebrow, immediately next to Size, and farther from the top of the nose. But as yet the function of the Organ 25 has given rise to so much discussion, as to leave it far from certain what that precisely is. Mr Combe says, 'Persons who excel at archery and quoits, and also those who find great facility in judging of momentum and resistance in mechanics, are observed to possess the parts of the brain lying nearest to the organ of Size largely developed; and the organ is now regarded as probable. Persons in whom Individuality, Size, Weight, and Locality are large, have generally a talent for engineering, and those branches of mechanics which consist in the application of forces; they delight in steam-engines, water-wheels, and turning-lathes. The same combination occurs in persons distinguished for successful feats in skating, in which the regulation of equilibrium is an important element. Constructiveness, when Weight is small, leads to rearing still-fabrics, rather than to fabricating working machinery.' Mr Simpson has given much attention to this faculty ('Phrenological Journal,' vol. ii. p. 412), and opened up some original views for discussion in the phrenological world; a new chapter, as Mr Combe calls it, in the science of mind. He cites a number of noted mechanicians and engineers in whom the Organ 25 is large. In the bust of James Watt it is particularly prominent. Children who walk early and steadily have uniformly the organ large, and the inference was drawn that the faculty gives the power of preserving equilibrium, or that balance of forces which is essential to the application of animal power, and even to existence.

No. 26.—Colouring.

As every object must have a colour in order to be visible, it seems necessary that there should be a faculty to cognize this quality. The organ is the next outwards from Weight in the eyebrows, occupying the precise centre of each eyebrow. A hollow there, into which the end of the finger could be put, or such a flatness in the ridge of the eyebrow that a perpendicular line dropt from it would pass through the eyeball, has, times without number, been found to be accompanied with a want of power to discriminate colours, often to a ludicrous extent. The organ is large in great painters, especially great colourists, and gives an arched appearance to the eyebrow; for example, in Rubens, Titian, Rembrandt, Salvator Rosa, Claude Lorraine, and others. A large endowment of the organ gives great delight in flowers and brilliant colouring of all kinds. Nature has profusely provided for the gratification of this faculty, by the exquisite colouring in which her works are dressed. Some metaphysicians consider the pleasure we derive from colours to be the result of the association of ideas. Phrenology has discovered that it is the great gratification of an organ forming part of our constitution. Like that of Ideality, the pleasures we derive from Colour are gratuitous goodness from the Creator's hands.

No. 27.—Locality.

Dr Gall was led to the discovery of this faculty as primitive, by comparing his own difficulties with a companion's facilities, in finding their way through the woods, where they had placed snares for birds, and marked nests, when studying natural history. Every material object must exist in some part of space, and that part of space becomes *place* in virtue of being so occupied. Objects themselves are cognized by Individuality; but their place, the direction where they lie, the way to them, depend on another faculty, a faculty given for that purpose. Without such a power, men and animals must, in situations where objects were numerous and complicated in their positions, as woods, have lost their way. No man could find his own home, no bird its own nest, no mouse its own hole. The use of the faculty will be rendered plain by considering what it is we do when we wish to remember our way through the streets of a large city; we note particular objects, buildings, for example, and observe how they stand in relation to each other, and these relations we can remember, although with a faint recollection of the forms of the objects themselves. The organ is large in those who find their way easily, and vividly remember places in which they have been. It materially aids the traveller, and is supposed to give a love for travelling. The organ was large in Columbus, Cook, Park, Clarke, and other travellers. Geometricians, whose study is the relation of spaces, have the organ large—as was the case with Kepler, Galileo, Tycho Brahe, and Newton. The faculty, when active, prompts the individuals to localise everything, and think of it as in its place.

No. 28.—Number.

The organ of this faculty is placed at the outer extremity of the eyebrows and angle of the eye. It occasions, when large, a fulness or breadth of the temple, and often pushes downwards the external corner of the eye. When it is small, the part is flat and narrow between the eye and the temple. Their Number is a very important relation or condition of things, and requires a distinct perceptive power. Our safety, and even existence, may depend on a clear perception of number. Dr Gall called the faculty '*Le Sens de Nombres*,' 'The Sense of Numbers,' and assigned to it not only arithmetic, but mathematics in general. Dr Spurzheim more correctly limits its functions to arithmetic, algebra, and logarithms; geometry being the exercise, as already shown, of other faculties. Dr Gall first observed the organ in a boy of nine years of age near Vienna, who could multiply and divide, mentally, ten or twelve by three figures, in less time than expert arithmeticians could do with their pencils. Dr Gall adds, 'he had created his own method.' An advocate of Vienna regretted to Dr Gall that his son was so much engrossed with calculating, that he attended to nothing else. Dr Gall compared the heads of these two boys, and found no particular resemblance but in one place—that described above—where they exactly agreed. Dr Gall then went to noted arithmeticians—among them an author of tables of logarithms—and found the same organisation. Many other examples will be found in the phrenological writings.

No. 29.—Order.

The organ of this faculty is placed in the eyebrow, between Colouring and Number, and is large and prominent, and often pointed like a limpet-shell, in those who are remarkable for love of method, arrangement, and symmetry, and are annoyed by confusion and irregularity. The marked love of order in some persons, and their suffering from disorder, are feelings which no other faculty, or combination of faculties, seems to embrace. Several cases are mentioned in the phrenological books, where it characterised idiots, deficient in almost every other faculty. Mr L——, a late medical gentleman in Edinburgh, was remarkable for the organ and its manifestation. He was pointed in his engagements—for the faculty gives this important habit—neat and careful in his writings, regular in his accounts, precise in his dress, and cleanly in his person. In savages, whose habits are slovenly, filthy, and disgusting, the organ is comparatively small.

No. 30.—Eventuality.

The organ of this faculty is situated in the very centre of the forehead, and when large, gives to this part of the head a rounded prominence. Individuality has been called the faculty of *nouns;* Eventuality is the faculty of *verbs*. The first perceives mere existence; the other motion, change, event, history. All knowledge must be of one or the other of these two descriptions—either things that *are*, or things that *happen*. In the following examples—the MAN *speaks*, the WIND *blows*, the DAY *dawns*, the nouns cognized by Individuality are printed in capitals; while the verbs, addressed to Eventuality, are in italics. The first is simple existence; the other is action, event, history. Dr Gall distinguished, as the metaphysicians do, *verbal* memory, *local* memory, *real* memory. It is now phrenological doctrine that all the intellectual faculties have their own memory. Form remembers forms; Colour, colours; Size, dimensions; Individuality, objects; and so on.

The most powerful *knowing* minds have a large endowment of both Individuality and Eventuality; and such individuals, even with a medium reflecting organisation, are the clever men in society—the acute men of business—the ready practical lawyers. The organ of Eventuality is generally well developed in children, and their appetite for *stories* is well known. Those, however, in whom Eventuality is moderate, and Individuality large, are prompted less to listen to tales than to 'see things,' as they call the exercise of their more powerful faculty. In after-life, the latter will observe minute existences—will tell how many nails are in a door, and miss one if taken out before their next inspection. The former will make use of incidents when they wish to recall any matter of memory.

No. 31.—Time.

Whatever be the essence of time as an entity, it is a reality to man, cognizable by a faculty by which he observes its lapse. Some persons are called walking timepieces; they can tell the hour without looking at a watch; and some even can do so, nearly, when waking in the night. The faculty also marks the minute divisions of duration, and their relations and harmonies, which are called *time* in music, and *rhythm* in versification. The impulse to mark time with the head, hands, feet, and whole body, is too common, too natural, and too strong, not to be the result of a faculty; it is the impulse to dance, almost universal in both savage and civilised man. In some, the impulse, when well-marked time is offered—the better if combined with music, though a well-beat drum may be danced to—is often irresistible. It exists in a diseased state, for we have seen dancing madmen. Dogs, horses, and many other animals give plain indications of possessing the faculty, by their conduct on the return of particular days, occasions, &c.

No. 32.—Tune.

The organ of this faculty is situated still farther out than that of Time, giving a roundness to the point where the forehead turns to form the temples. It is large in great musicians; and when small and hollow, there is an utter incapacity to distinguish either melody or harmony. Music may be defined as a species of natural language, depending immediately on either a melodious succession or a harmonious unison of tones—tones, again, being distinguished from simple noises by a peculiarity in the mode of their production. (See ACOUSTICS, Vol. I.) The organ of Tune in the human brain appears to have been constituted in relation to these physical facts; and in cases of good endowment, to have a most exact perception of all their niceties, and a power of using them to the production of the species of natural language which we term music. Cases of a low endowment of the musical faculty, or of persons said to want *musical ear*, are of frequent occurrence, though perhaps in many such instances early culture would have brought out some trace of the faculty. The great bulk of mankind possess the organ in a moderate endowment, so as to be capable of enjoying music in some degree. The individual possessing it in high endowment becomes, in all stages of society, a distinguished artist, exercising a peculiar power over his fellow-creatures, so as to rouse, melt, soothe, and gratify them at his pleasure. But the gift, in this active form, is liable to be much modified according as it is accompanied by Ideality, Benevolence, Wit, and other faculties.

No. 33.—Language.

When the faculties are in activity, either singly or in combination, the impulse in almost all individuals is strong, in many irresistible, to communicate to others the feelings or thoughts produced by them. This may be done by signs, which is natural language, or by words, which constitute conventional. A faculty is given to man and animals which connects feelings with signs and cries; but to man alone is given articulate speech. The comparative facility with which different men clothe their thoughts in words, depends on the size of this organ, which is situated on the super-orbitar plate, immediately over the eyeball, and when large, pushes the eye outwards, and sometimes downwards, producing in the latter case a wrinkling or pursing of the lower eyelid. There is no fluent speaker deficient in this organ. There is some doubt of the faculty giving the power of learning languages, and the spirit of languages in philology; the prevailing opinion is, that the faculty of Language has less to do with this power than Individuality, Imitation, and some other faculties. Learning the words and structure of other languages is quite a different thing from applying our own to express our thoughts and feelings.

None of the organs have been better proved to be primitive by diseased manifestation than this. The instances are numerous of persons losing the power of finding words for their thoughts, and recovering it again; and in many of these cases, the brain in the organ when examined after death has been found diseased. Pain in the region often accompanies the loss of appropriate speech, in plague, yellow and typhus fever. But we must refer for further information on this interesting subject, to the works on phrenology, especially to Mr Combe's 'System.'

Internal Excitement of the Knowing Organs—Spectral Illusions.

The Knowing Organs are for the most part called into activity by *external* objects, such as forms, colours, sounds, individual things, &c.; but internal causes often excite them; and when they are in action, objects will be perceived which have no external existence, and which, nevertheless, the individual will believe to be real. This is the explanation of visions, spectres, and ghosts, and at once explains the firm belief of many that they have appeared to them, and the fact that it never happens that two persons see the same spectres at the same time. We formerly remarked,

when treating of Wonder, that excess or disease in that organ predisposes the patient to believe in the marvellous and supernatural, and probably stimulates the Knowing Organs into action, when spectral illusions are the consequence. A young lady known to Mr Simpson, and mentioned in the phrenological books by the initials of S. L., lived in indescribable horrors for above a year, in consequence of the visits of the spectral forms of persons and other objects, and the perception of bright lights, brilliant colours, music, and other illusions. At the time of these false perceptions, she was strangely affected in the organ of Weight and the sense of Resistance; she lost the power of preserving her balance, and saw perpendiculars and horizontals at other angles. She complained of sharp pain when her visitants appeared to her; and although ignorant of phrenology, and even the situation of the organs, she put her finger and thumb, when asked where she felt the pain, to the organs of Form and Individuality. For several weeks these were the site of her pain exclusively; and then the figures which appeared to her were *forms* without *colour*, resembling, as she stated, cobweb. Here plainly was Form active, but Colouring dormant. Some weeks after this her objects became naturally coloured, and the pain extended along the eyebrows, including the organ of Colouring. Embracing, as the progress did, Size, her illusions referable to that organ in morbid activity were singular: she saw objects sometimes gigantic, sometimes dwarfish, and even minute. The pain proceeding onwards along the whole eyebrows, Order and Number became affected, and her visiters came in great numbers and most annoying confusion, so that sometimes they seemed to tumble into her apartment like a cascade, a confused mass of persons, limbs, heads, &c. Her apparitions began at last to *speak* to her, and her terrors were much aggravated. It was probable that the organs of Language and Tune became affected; for she often heard bands and choruses of music. We may add that she was greatly relieved when the true nature of her spectres was explained to her. In time the affection left her entirely. It is likely that the proximate cause of these morbid manifestations was an undue determination of blood to the region of the head where the Knowing Organs are situated.

GENUS III.—REFLECTIVE FACULTIES.

The Intellectual Faculties already considered give us knowledge of objects, and the qualities and relations of objects, also of the changes they undergo, or events. The two remaining faculties, according to Dr Spurzheim, 'act on all the other sensations and notions'—that is, they judge of the relations of different ideas or classes of ideas produced by the Knowing Faculties. They minister to the direction and gratification of all the other faculties, and constitute what by excellence is called reason—in other words, reflection.

No. 34.—Comparison.

Dr Gall discovered the organ of this faculty in a man of science who [illegible] chiefly by means of analogies and comparison[illegible] by logical deductions. He *illustrated* eve[illegible] carried his opponent along with him with a[illegible] resemblances, concluding that the thing disputed must be true, being *like* so many things that are known to be true. In his head was a fulness in the form of a reversed pyramid, just in the middle of the upper part of the forehead. The faculty perceives analogies and resemblances. Every faculty can compare its own objects. Colouring can compare colours; Weight, weights; Form, forms; Tune, sounds; but Comparison can compare a colour with a note, or a form with a weight, &c. Analogy is a comparison not of things, but of their relations. Dr Spurzheim thought that the faculty perceives difference. Mr Scott dissents from this, and attributes that function to the faculty of Wit. The precise fundamental function of the faculty is yet controverted. Mr Hewett Watson argues ingeniously, and Mr Combe assents to the argument, that it is the perception of *conditions*, of the condition in which objects exist. As the organ of analogies, similitudes, and comparison of ideas, it is established.

No. 35.—Causality.

This is the highest and noblest of the intellectual powers, and is the last in the phrenological analysis of the faculties. Dr Spurzheim so named it from believing that it traces the connection between *cause* and *effect*, and sees the relation of ideas to each other in respect of *necessary consequence*. Its organs are situated on each side of Comparison. Some metaphysicians have held that we have no idea of cause, but see only sequence, or one thing following another. It is true that we do see sequence. When, for example, fire is put to gunpowder, Individuality perceives the existence of the powder and of the match; Eventuality sees the motion which unites them, and the change or event which takes place in the explosion; but we have a *third* idea—namely, that of power, agency, or efficiency, existing in some way in the cause, to produce the effect. Whence do we get this third idea?—from a third or distinct faculty, and that is Causality. With a powerful perception of *causation*, the individual reasons from cause to effect by logical or necessary consequence. It is the faculty which sees principles and acts upon them, while the other two faculties only [illegible] experiments. Resource in difficulties, and sound judgment in life, are the result of powerful Causality. The organ is established.

Adaptation of the External World to the Intellectual Faculties of Man.

We quote the following passage from Mr Combe's 'System' (4th edition, p. 593):—'The human mind and the external world having emanated from the same Creator, ought, when understood, to be found wisely adapted to each other; and this accordingly appears in an eminent degree to be the case. If the reader will direct his attention to any natural or artificial object, and consider, *1st*, Its existence; *2d*, Its form; *3d*, Its size; *4th*, Its weight; *5th*, Its locality or relation in space to other objects; *6th*, The number of its parts; *7th*, The order or physical arrangement of its parts; *8th*, The changes which it undergoes; *9th*, The periods of time which these require (we would add here, its sound-producing quality or sonorousness, as quite different from all those enumerated); *10th*, The analogies and differences between the individual object under consideration and other objects; *11th*, The effect which it produces; and *lastly*, If he will designate this assemblage of ideas by a name, he will find that he has obtained a tolerably complete notion of the object.' We may add, that the relations between the affective faculties or feelings of man and the moral world are not less harmonious; and demonstrate design in a manner altogether irresistible.

Relation between the Functions and the Structure of the Brain.

An accumulation of facts which amounts to proof as cogent as is to be found in regard to any other physical truth has connected with the *anterior* lobes of the brain the Intellectual Faculties, and with the *middle* and *posterior* lobes the Feelings. The Intellectual Faculties constitute the WILL of man, and in obedience to the will are the *voluntary* motions. But the feelings, when in activity, as is well known, have certain *involuntary* motions connected with them. Now the spinal cord has two columns—the one, the anterior, observed to produce motion, and therefore called the *motory* tract; and the other to produce sensation, and therefore called the *sensory* tract. These two tracts join the brain by what is called the *medulla oblongata*; and here a most striking distinction takes place. The motory tract *alone* communicates with the anterior lobes, in which, in the intellectual organs, resides the will. Hence in *voluntary* motion, as an effect of will, the motory tract obeys the anterior lobe alone; in other words, the anterior lobe of the brain *manifests* will, and the motory tract *executes* will. The sensory

tract has no connection with the anterior lobes or intellectual organs.

Again, the *sensory* tract has a fibrous connection with the middle and posterior lobes of the brain, and with the cerebellum, and most appropriately, for these are the organs of the *feelings*. But as the feelings have *involuntary* motions when acting, these are provided for by a fibrous connection between the organs of the feelings and *both* the sensory and motory tracts. Yet, as the motions consequent upon the energy of passion are not voluntary, but instinctive, we should expect a separate motory tract for instinctive motion, with which, and not with the tract of voluntary motion, the organs of the feelings should be connected. This distinction, however, has only been conjectured, it is not yet ascertained. Mr Combe farther adds—'It is certain that mental *emotions* exercise a powerful influence over the organic functions: when the emotions are agreeable, they stimulate these functions to healthy action and when painful, they depress their energies and produce liability to disease. Reciprocally, when the organic functions, such as digestion, respiration, and secretion, are disordered, an irritable and distressing state of the mental feelings is induced. The intimate relations between the convolutions of the brain devoted to the mental emotions, and the sensory tract of the spinal cord, is in harmony with these facts. The habit of contending with *intellectual* difficulties, if unconnected with feeling, does not injure the organic functions so severely as do strong and powerful emotions; but it weakens the locomotive powers. Sedulous students of abstruse problems acquire a great aversion to locomotion. These facts correspond with the arrangements of structure by which the convolutions of the anterior lobes, devoted to intellect, spring from the motory tract, and are not connected with the sensory tract of the spinal marrow.' We are not aware that anatomical and physiological investigations have unfolded facts more interesting than those now detailed.

Natural Language of the Faculties, or Pathognomical and Physiognomical Expression.

What has been stated in the preceding section will prepare the reader for the fact, that, by means of involuntary motions, each organ of feeling produces movements, attitudes, and expressions peculiar to itself. The chief aim of the dramatic actor and pantomimist is to study and represent these movements, attitudes, and expressions; and hence such of them as have studied phrenology, have declared that it affords them the most valuable guidance. Dr Gall's 'Physiology of the Brain,' and Dr Spurzheim's 'Physiognomical System,' enter fully into this curious subject, and have ascertained the laws which determine the natural language of the faculties. It has been laid down as the leading principle, that the instinctive motions are always *in the direction of the organs*. Self-Esteem, for example, throws the head high and slightly backwards, vulgarly called 'turning up the nose' at anything. Firmness gives an erect stiffness to the person. Cautiousness throws the head backwards and to the side. Veneration slowly forward; hence the reverence and bow. The involuntary motions extend to the features of the face; hence the dark and harsh expression of Destructiveness, and the smile of Benevolence and Love of Approbation. The countenance tends to take a permanent expression from the prevalence of particular feelings. It is this which renders the physiognomy of phrenology scientifically trustworthy.

The Organs arranged in Groups.

It is instructive to find the organs of such of the human faculties as have an affinity to each other, placed contiguously in the brain, and to observe that, by an apparent sympathy, they stimulate each other to activity. 1*st*, The supposed organs of the Love of Life and Alimentiveness—the essentials of Self-Preservation—lie contiguous in the brain. But man has a carnivorous stomach and teeth, and must destroy animal life to preserve his own. Destructiveness, accordingly, lies close to the two organs mentioned. He must not only devour the gentler animals, but must not be devoured by the ferocious; hence his Cautiousness, Combativeness, and Secretiveness are all close neighbours of the three organs mentioned, and of each other. The accumulation of surplus above his immediate wants, so important to man's preservation, is prompted by Acquisitiveness; while, without Constructiveness, he would perish for want of shelter and clothing. Thus a cluster of no fewer than *seven* organs forms to man the *self-preservative* group of faculties. 2*d*, Man is commanded to do more than 'subdue;' he is enjoined, by multiplying his species, to 'replenish the earth.' Behold, then, another group of faculties for this purpose, which may be called the *species-preservative*, or *domestic* group—Amativeness, Philoprogenitiveness, Inhabitiveness, and Adhesiveness. 3*d*, Designed for the society of his fellow-men, man asserts his own rights and legitimate power by Self-Esteem or Self-Love; while he is influenced by the opinion of others to the proper regulation of his conduct by Love of Approbation, or regard to character. Firmness aids Self-Esteem in asserting right. The three organs located close to each other form our *rights and character-preservative* group. 4*th*, The *moral* group, by excellence, is formed by Conscientiousness, Benevolence, and Veneration *earth-directed*. 5*th*, The *religious* group is formed by Veneration *heaven-directed*, Wonder, Hope, and Ideality; the last being claimed as a religious faculty by Sir George Mackenzie, as the love of the perfect. 6*th*, A bountiful Providence has provided a rich fund of recreative pleasure for man in what may be called the *poetical* or *recreative* group of his faculties—namely, Imitation, Wonder, Ideality, Wit, Tune, and Time, all lying contiguous in the brain. *Lastly*, Turning to the intellectual powers, we have them in one splendid and 'god-like' assemblage in the forehead of man, subdivided into three groups, according to their uses. The lowest range, the *simply-perceptive* group, gives the perception of objects and their qualities. Above it is placed the *relatively-perceptive* group, for perceiving the relations of objects and events; and, above all, the organs of the highest of man's faculties—namely, his reflecting powers, which perceive the relations of ideas, and reason upon them; or the *reflective* group.

CONTINUATION OF PHRENOLOGY AS A COMPLETE PHILOSOPHY OF MIND.

The phrenologists have chiefly confined their attention to the organs of the brain, and the various faculties of which these are the instruments. The former writers on mind (Reid, Dugald Stewart, Brown, and others) gave, on the contrary, their chief care to the mental acts called Attention, Perception, Conception, &c. which they considered as faculties. The phrenologist does not overlook the importance of this department of mental philosophy, but differs from the metaphysicians in considering perception, conception, &c. as only *modes* in which the real faculties above described *act*. This distinction is one of great importance.

According to the phrenologists, the faculties are not mere passive feelings; they all tend to action. When duly active, the actions they produce are proper or necessary; in excess or abuse, they are improper, vicious, or criminal. Small moral organs do not produce abuses; but they are unable to prevent the abuse of the animal organs, as the larger tend to do; thus small Benevolence is not cruel, but it does not offer sufficient control to Destructiveness, which then impels to cruelty. Large organs have the greatest, small the least tendency to act—each faculty producing the feeling or idea peculiar to itself. Seeing that all the organs tend to action, the Creator must have intended a legitimate sphere of action for them all. *He* could never have created either bad or unnecessary faculties.

The PROPENSITIES and SENTIMENTS cannot be called into action by the will. We cannot fear, or pity, or love, or be angry, by willing it. But *internal* causes may sti-

mulate the organs, and then, whether we will or not, their emotions will be felt. Again, these feelings are called into action in spite of the will, by the presentation of their *external* objects—Cautiousness by objects of terror, Love by beauty, and so on. The force of the feelings, whether excited from within or without, will be in proportion to the activity of the temperament. Excessive action of the affective faculties, or the removal of their object, causes pain. Excessive rage is painful to Destructiveness; and the death of an infant pains the Philoprogenitiveness of the mother. Insanity is a frequent result of over-activity of the affective feelings. An affective faculty may be diseased, and yet the intellect sound. The converse is also true. When the organ is small, its feeling cannot be adequately experienced. Hence the frauds of those with small Conscientiousness and large Secretiveness and Acquisitiveness. The will can *indirectly* excite the affective feelings, by setting the intellect to work to find externally, or conceive internally, the proper objects. This accounts for different turns and pursuits. Lastly, the affective faculties do not form ideas, but simply feel; and therefore have no memory, conception, or imagination. They have *Sensation* only; in other words, they feel; hence Sensation belongs to all the faculties which feel, and to the external senses and nervous system in general. Sensation, therefore, is a state or condition, not a faculty, as is held by the metaphysicians.

The KNOWING and REFLECTING FACULTIES, or Intellect, form ideas, perceive relations, and are subject to, or rather constitute, the Will; and minister to the affective faculties. They may be excited by external objects, and by internal causes. When excited by the presentation of external objects, these objects are *perceived*, and this *act* is called PERCEPTION. It is the lowest degree of activity of the intellectual faculties; and those who are deficient in a faculty cannot perceive its object.

CONCEPTION is also a mode of action of the faculties, not a faculty itself. It is the activity of the faculties from internal causes, either willed, or involuntary from natural activity. IMAGINATION is Conception carried to a high pitch of vivacity. Thus Perception is the lowest degree of activity of any of the intellectual faculties, Conception the second, and Imagination the highest.

MEMORY, too, is not a faculty, but a mode of action. It necessarily follows that there can be no such thing as the *general* memory of the metaphysicians, but every faculty must have its own memory. Memory belongs, however, only to the intellectual faculties. It differs from Conception and Imagination in this, that it recollects *real* objects or events which it has actually perceived, and adds the consciousness of time elapsed since they were perceived. The other named modes of action do not require realities or time.

JUDGMENT, in its proper sense, is the perception of adaptation, fitness, and necessary consequence; and is a mode of action of the reflecting powers. In a certain sense, the Knowing Faculties may each be said to possess judgment; as Colouring judges of colours, Form of forms, Tune of music. When, however, we use the word judgment, we mean right reasoning, sound deciding. To this a proper balance of the affective faculties is essential. There can be no sound judgment where any of the feelings are excessive.

CONSCIOUSNESS is the knowledge which the mind has of its own existence and operations, whether these last are affective or intellectual; but as it does not reveal the existence or nature of the powers themselves which think and feel, it was an error in some of the metaphysicians to attempt to discover these powers by merely reflecting on their own consciousness.

ATTENTION is not a faculty, but the application, or *tension*, of any or all of the intellectual faculties.

ASSOCIATION is that succession of ideas in the mind, each seeming to call up that which succeeds; so that, in our waking hours, the mind is never without an idea passing through it. This is a state or condition of the faculties, not a faculty. The metaphysicians have endeavoured to discover laws by which, in every mind, this succession is regulated. The uniform associating powers, according to them, are resemblance, contiguity in time and place, and contrast. The phrenological view is, that the predominant faculties in each mind create the associations. Association is a very important principle in mental science. There is a mutual influence of the organs which produces associations; a natural association between certain external objects and certain faculties; and artificial associations may be formed between objects and faculties. For example, long exercise of a particular organ or organs in performing certain acts, renders those acts easy, by the rapid association of the ideas necessary to their performance. Professional skill, in all its varieties, is thus accounted for. Mutual action of the faculties arises from the beautiful arrangement or grouping which we have already described.

PASSION is any faculty in excess. Thus there are as many passions as faculties. Love is the passion of Amativeness in union with Veneration; avarice of Acquisitiveness; rage of Destructiveness.

PLEASURE and PAIN also belong to each faculty, according as it is agreeably or disagreeably affected.

PATIENCE and IMPATIENCE are respectively the results of certain combinations of faculties. Thus Benevolence, Veneration, Hope, Conscientiousness, and Firmness, with moderate Self-Esteem, produce a quiet, meek, resigned, and patient spirit. Apathy is quite different, although often confounded with Patience; it arises from lymphatic temperament or deficient brain. On the other hand, Self-Esteem, Combativeness, and Destructiveness, when larger than Benevolence, Conscientiousness, and Veneration, will be impatient of contradiction. Large Time and Tune give impatience of bad music.

JOY and GRIEF arise from agreeable and disagreeable affections of the faculties by causes of considerable power. Wealth, power, and praise give joy to Acquisitiveness, Self-Esteem, and Love of Approbation; while, on the other hand, the death of a beloved relative affects Adhesiveness with grief.

SYMPATHY, as its name (from the Greek) signifies, is feeling with another, or partaking of his emotions. The laws which regulate the activity of the faculties show the nature of this affection and the circumstances in which it occurs. Two individuals of similar constitution of mind naturally feel alike. This is the sympathy felt in the theatre, listening to eloquence, or witnessing distress and suffering. But there is another kind of sympathy—namely, that which is called up by the activity of a particular feeling in another's mind, manifested by the natural language of the active faculty; thus the haughty air of Self-Esteem instantly calls up a defensive Self-Esteem in those who witness it, if the faculty be powerful in them. On the other hand, Benevolence, with its kind natural language, excites the same feeling in another. Wonder, too, spreads rapidly; and so on.

HABIT may be defined as the power of doing anything well by frequently doing it. But before it can be done at all, there must be the faculty to do it, however awkwardly. Habit, then, is the acquired strength of the faculty by its repeated exercise.

TASTE was held by Mr Stewart to be a faculty, and acquired by habit. Phrenology holds that good taste is the result of a harmonious action of all the faculties. Bad taste is evinced when particular faculties, especially the propensities, break out beyond due limits. Social converse is injured by bad taste in various ways—by displays of vanity, disputatiousness, &c. Bad morality is bad taste; but it is more, it is turpitude. A standard of taste, about which so much has been written, is not a decision of certain objects or qualities of objects as beautiful or perfect to *all* men. This were a vain attempt; but it may be approximated by appealing to the taste of individuals of very favourable and harmonious organisation, which has received the highest possible culture. It cannot fail to strike that good taste, sound judgment, and good morals all require well-balanced faculties.

LOGIC.

OBJECTS OF THE SCIENCE.

TRUTH is commonly held to be the great and proper object of human curiosity—the end of all inquiries, the indispensable attribute of everything we call knowledge, and one of the greatest achievements and most glorious possessions of man.

Now all these phrases point to something not always possessed, not obvious, and it may be hard to acquire; and yet there are things correctly called true which are not of this description. It is true that I write, that the walls of a room surround me, that I walked in the streets yesterday; and the personal experience and conscious history of each individual will furnish him or her with an unlimited number of the same kind of truths; but there is neither labour, nor anxiety, nor a very great feeling of exultation accompanying them. It cannot, therefore, be this sort of truth that is so highly extolled.

These facts of personal experience, however, are not the whole of truth or knowledge; they are only a very limited portion of the things known and believed in. We receive many events as true on the experience of others; we can acquire a conviction of the reality of occurrences that have taken place in former ages, or in remote countries. Moreover, in respect to what is yet future, we have often the same certainty as if we actually experienced it. And it is our having to find out, with accuracy and precision, things existing only in the experience of others, and things past, distant, and future, that renders the discovery of truth frequently arduous, as well as worthy of being achieved.

There are thus two distinct kinds of truth and knowledge: the one furnished by personal experience, commonly termed Intuitive, which is of narrow limits, but of the highest possible certainty; the other not obtained from personal experience, and extending over the whole world, and into past and future time. To arrive at a knowledge of this last class of truths, and to acquire certainty regarding them, is an operation of labour and care, and must be gone through in a particular way, which it is possible distinctly to point out.

The class of things not ascertainable by direct experience become known by being connected with known things by a bond that direct experience has ascertained. When we see a flash of lightning, we have a direct experience of a luminous appearance, and we further know that a noise of thunder will follow; that is, we can anticipate and believe in what has not yet been actually perceived. In this case every one is aware that the grounds of the anticipation are, that we have formerly had experience of both events, and that the one has been found to follow the other. And when, on observing that five seconds have elapsed between the flash and the noise, we believe that the place of the thundery agitation is a mile off, it is because the previous experience of the travelling of sound has shown it to be at the rate of one-fifth of a mile per second. So, having observed that flame is usually accompanied with heat, we are ready at any time, when we see a flame, to believe that heat is given forth, though we should not actually feel it. What nature seems to associate together in the world, we come to associate in our minds, and we need only to be directly cognisant of one part of the combination to realise all the rest. This kind of knowledge is called knowledge by Inference; and it will be obvious that it is derived through our previous experience of the occurrence of united events. But as it is not every case of two things happening together which will enable us to feel sure that they will in all future time happen together, we require to have some means of discriminating the conjunctions that will always occur, from such as may fail at the very time when we trust to them.

If nature furnishes conjunctions of events, or companion circumstances, enabling us, on finding one, to make sure of the presence of a second which may be hidden from the immediate view, it is important that we should know them all; for they will serve to expand our vision, and will give us the means of acting on what concerns us, although not before us. The discovery of all these natural conjunctions, called Laws of Nature, is the discovery of Truth, and the reducing of them to their most naked and simple form, is Science; the conceptions of which approach more closely than any others to the deepest and clearest possible insight into the scheme and mechanism of the universe.

Language, or speech, originally contrived for the communication of meaning, thought, and emotion or feelings, has become a great and indispensable instrument in the discovery of the laws of things, or the natural conjunctions, and united events established in the world. This instrumentality is not absolutely essential to our gaining of knowledge by Inference, any more than it is to knowledge by Intuition: the once whipped dog knows that if it do a certain act another whipping will follow, and this knowledge comes from a pre-established connection of events, which enables the animal to draw the inference. But it is found that we cannot advance far in tracing out the actual conjunctions of nature, nor in deducing conclusions from them in the applications to life, without the help of language or speech, together with certain classes of marks and symbols that are not employed in ordinary conversation, although somewhat of the nature of language. This necessity is owing to the abstruse and hidden character of the greatest and most comprehensive uniformities of nature; for if these lay all on the surface, like the coincidence of sunrise with daylight, our mere notion of the two connected things, derived through one or more of the senses, would be quite enough to put us in possession of the laws.

Logic (derived from the Greek word *logos*, which literally signifies speech or discourse) is the science that treats of the methods for assisting and guiding the human faculties in the discovery of the true natural conjunctions of the world (which are the subject-matter of the various sciences), and in the verification of all alleged conjunctions, and everything that can be a matter of belief or disbelief. It is the science of discovery and proof; it gives the rules for sifting and testing everything we call evidence. By investigating to the bottom the grounds of certainty in all cases of affirmation or denial, it enables us to arrive at what is the truth in instances where the human faculties, unassisted by its methods, would entirely fail.

NAMES AND ASSERTIONS.

As the truths of which Logic takes cognisance are all mixed up with Language, it is essential at the very outset to give an account of the various classes of names that are involved in affirmations and denials, or that serve to embody the conjunctions found in nature.

The invention of names has been determined by the character of the objects to which they are applied, or at least by the conceptions formed of those objects. This has been illustrated in a preceding paper (No. 52, Vol. II.) on LANGUAGE. The classification of names for our present purpose will be somewhat different from the order of their invention, although coinciding with it in several points. For logical purposes, there are two great classes of names of objects, apart from the verb which serves for affirmation.

The Different Kinds of Names.

The first class of names includes *individual* and proper names, or the names of single objects—as England, the Nile, Mont Blanc, Niagara, Napoleon; they are the marks or designations of certain individual things or existences, whether natural objects or individual men or animals. They serve merely the purpose of marking out some one thing from among the multitude of things at large, exactly as would be done by pointing to it with the finger, or in any way indicating it to another person. They give no information, and involve no assertion, nor any matter of belief or disbelief; neither do they in general make any comparison between the object and other objects. These names serve the bare purpose of communication, and they are the only names which are of themselves destitute of all logical function.

The second class of names includes *general* names, which are of various sorts, but have all a common character as distinguished from the foregoing. It being found that, notwithstanding the variety presented by nature, there is a great extent of similarities, or many instances of likeness between objects, this likeness striking the human mind has led to the application of a common name to the individuals of each resembling group. Thus supposing *Nile* were the proper name of the first river which came under the notice of a people, and that they afterwards met in with a second river, the similarity of the two objects would strike them at once, and the name *Nile* would be used as the mark of the second as well as of the first. The same process would be applied to a third, and fourth, and so on, till it became the common name of rivers in general. It would now cease to be the exclusive mark of one object, and would denote one of a class of objects possessing common features. To serve the purpose of pointing out a specific individual, some second name would have to be superadded, or some device used, for showing which one of the group was referred to: the first would answer its original purpose of a proper name only by being coupled, or *qualified*, as grammarians term it, by a second name having reference to one individual of the class, and to no other.

At first sight this may seem a cumbersome and clumsy process, since it ends in requiring that each object should have two names instead of one. But, in fact, several very important steps have been gone through, in their nature quite different from the mere affair of giving names for distinguishing individual things from one another. There is, in the first place, a series of discoveries as to a number of natural objects. It has been found out that certain distinct things situated apart from each other in the world, are, nevertheless, to a certain degree like one another. Now the discovery of a likeness in two things is not only an agreeable satisfaction to the human intellect, which would otherwise have to acquire an entirely distinct notion of each, but it shortens and facilitates human labour in many ways. For so far as the likeness holds, the things will serve the same practical purposes, and may be indiscriminately applied according to convenience: it does not require a separate investigation to see what each is good for, but the conclusions from the one can be instantly adopted for the other, thus diminishing the trouble of inquiry; and if we wish to make known their appearance and character to our fellows, it will suffice to call attention to one of them, so that we also lessen the toil of the acquisition of knowledge. Moreover, if we make any new discoveries about one, they are made at once for both, as certainly as if we had gone through the operation for each. If ten objects receiving the common name 'river,' were once completely identified, and if the characters of water, and the origin and movements and termination of a single river were found out, a great deal of knowledge would be gained concerning all the ten without the labour of detailed inspection.

Wherever nature furnishes similarity between different things, it is of the highest advantage to man to detect this similarity; and when once detected, it can be declared and published by the use of a common name without any formal information. Thus instead of having ten proper names for the ten rivers above supposed, and of publishing declarations abroad that each has been found to resemble each, which would amount to a most voluminous mass of statements, all that is requisite in common discourse is to apply the one name to them all. The fact of similarity is thus insinuated and conveyed by every instance of the use of the common name. When a great discovery of identification has been made, like Franklin's discovery of the resemblance of thunder and lightning to the phenomena of a common electrical machine, it is published to the world most effectually by henceforth using the same name for both things; as when the newspaper accounts of thunder-storms use the phrases 'electricity' and 'electric' as part of the description. General names have thus a high and important function in respect to our knowledge of the world, and it is essential that they should be properly and guardedly used. Since they assert identities of objects, they may mislead us by a mere pretended identity; in which case our whole procedure respecting the objects would be perverted. It is therefore one part of the business of Logic to state the precautions necessary for the use of common or general names.

To understand fully the different species of general names, we must consider a process that takes place subsequent to the operations of identifying different objects and imposing a common name, and to the general use of this name to indicate their similarity, as well as to serve for their designating mark. This process is what is termed 'abstraction,' and is often a process of nice and delicate analysis, and of subtle invention. When we have found that several objects make nearly the same impression on our minds, without its being altogether the same, we desire to divide our conception of each into two parts—the one being the coinciding portion, and the other the differing portion—and to give a name or description of each, so as to keep them apart in our own minds and in the minds of others. This splitting up of a complex conception, with the view of fixing and describing it, is sometimes very easy, and sometimes one of the most difficult operations of the human understanding. If we see two knives exactly the same in the blade, but differing in the handle, we can easily state and describe both the agreement and the difference. A mechanical division of each into two parts, and the giving of one name to the common blade, and two distinct names to the differing handles, and pointing out what we mean by each, would be sufficient. We should thus be able to state why we used one name for both, and also why the common name would not always be enough to point out each. But if we take the general group named 'houses,' which have common properties as well as a common name, we cannot divide the conception so easily. The thing common to all houses could not be cut off from one of them, leaving exactly the points of its distinction from all the rest; neither can we point to any portion of the object as the thing common to all. We must bring in extraneous matter into this case, and state the common attributes of houses by a reference to other objects besides themselves; we must say, what is common to a house is its affording shelter, accommodation, and protection to human beings, or their valuables. But this is not an effort of mere analysis: it involves a complicated reference and a complicated description; it is, nevertheless, the only way of pointing out to ourselves, or to others, what that common thing is which enables a common term to be used for this class of objects, and a constant assertion of similarity to be made through that common term. And when once we know the agreeing part of the objects, we can find the non-agreeing part by what remains; or we can see that houses differ in size, form, colour, material, &c.; so that when one has to be

specified from all the rest, if it has not a proper name (such as St Paul's, St Peter's), language must be found to describe exactly what are the features wherein it differs from other houses, or from houses in general. The common attribute, once distinguished and represented to the mind, is called the *abstract idea* of the objects, because it is supposed to be withdrawn or cut away from the total mass as existing in nature. In the case of two knives of the kind we supposed, the abstract part is a material portion of the thing; in the case of the house, it is not a material portion, but a complicated description of relations with other objects. In thus going through the wide range of classes, or identified groups, we will find the greatest variety in the nature of the common parts of each class, and in the mode that must be had recourse to in order to state it. We shall here present a few examples of these varieties:—

The case of mechanical division of the agreeing from the differing part is of frequent occurrence, but requires no farther exemplification. A case somewhat more complex is when different objects contain a common ingredient mixed up or diffused through them—as in the case of wet bodies (which agree in containing water), salt bodies, sugary substances, and the like. The process of abstraction in this case would consist in separating the common ingredient, or determining what it is, and giving it a name; or if it has a name already, then the common designation of the class of objects would be derived from this name. Thus ores containing iron as their chief ingredient, are called iron ores; so we speak of siliceous minerals, clayey soils, &c.

A more subtle case of analytical abstraction is presented by objects which agree in things that cannot exist apart from the objects themselves, and whose designations therefore must not be such as to suppose a separate existence. Thus colour is generally such a common attribute; likewise form, hardness or softness, solidity or fluidity, taste, smell, are of the same character. No substance can exist having one of these effects alone in the absence of all other effects. Matter is so constituted as commonly to act upon the human organs in two or three ways at once; and we can discriminate the effects in our minds, although we cannot separate the properties causing them into different individual substances. Thus an orange may act upon the touch, on the sense of form, on the sight, on the taste, and on the smell, and we may have conceptions of each effect in some measure apart from all the other effects. We may smell it without receiving any other impression; the only impressions apparently inseparable are the sight and the form. But although these are not easily separated in the action upon the sense, they are felt to be a joint, although co-existing effect; and the intellect can effect a separation by giving a name and description to each, according to the feeling of the part of the impression that each produces. Thus we recognise an identity in all objects having the round form, whatever the colour may be; and although this form is always of some colour, we separate the form from the colour intellectually in two ways—the one, by giving a name that shall express the impression of form to the exclusion of an impression of colour; the other, by making a round form with a thin outline, or with the smallest possible amount of coloured or material surface to indicate that we wish to confine our consideration to the form by itself. Both methods are adopted in the study of forms in geometry: names are given to them apart from substance and colour; and fine outlines are made so as to exclude as much as possible these other impressions from the view of the mind. In the more complex case, therefore, of inseparable material attributes, it is still possible to recognise identity in the midst of differences; to have a distinct conception of the agreeing portion of the objects; and to give a name, a description, or a diagram to the common part which may be adopted as the general name of the group so agreeing. Thus we have things bitter, sweet, hard, rough, red, white, round, square, &c. Bodies acting on the sense of hearing, in addition to the other senses, are conceived apart and designated apart from their audible impression without any difficulty. There are also objects that agree not in any impression on the senses, but in some deeper impression on the more inward emotions—as things grand, terrible, beautiful, &c.—which effects can be separated by the intellect from the other effects, although the causes of them are inseparably joined with other causes or properties. In all such cases the formation of what is called an abstract conception may be made clear and intelligible; and the subsequent processes of naming and describing this conception, so as to make it an object of communication and common understanding, will be intelligible also; as in like manner the application of this common designation as a name of the whole group of objects that are found to produce on our minds the agreeing impression.

A still higher and very numerous class of abstractions are those exemplified in the previously-quoted case of houses, where the objects do not produce an identical impression except in company with other related objects. The process, however, is still essentially the same. The coinciding part of the various individuals makes an impression of its own, which may or may not be separable in the immediate sense from other things where the individuals differ, but which is separable by the devices known to the intellect—namely, verbal description, or pictorial or other representation; which description or representation is the abstract term and common handle of the conception, enabling it to be considered by the mind, and made known from one person to another; it will also serve as the general name of the things possessing the common attribute. Most of the abstractions of science are of this complex kind—as, for example, force, affinity, pressure, magnetism, analysis, vitality, virtue, imagination, government, security, civilisation, &c. In all these a complicated group of material objects has to be involved; and sometimes one class of conceptions, direct from the material world, has to be wrought up with another like class, and these again refined upon until the resulting conception is many removes from the actual things existing in nature which were at the base of the whole. For instance, the mathematical idea of integration, and the chemical idea of double decomposition, are the results of a series of conceptions elaborated out of one another, although having their first commencement in the impressions of the objects of the material world. In them the purely intellectual operations of naming, describing, and combining greatly predominate over the operations of comparing sensible impressions.

An important distinction among general names is brought out in the use of the phrases generic and specific names. In natural-history classifications these are constantly employed. Certain objects are called *species* in reference to certain others called *genera*, and the one is usually said to be included into the other. Thus Man is a species, and the class of two-handed animals is a genus, including the species Man along with others. Iron is a species, the metals are a genus. A species must be a class of objects agreeing in all the properties common to the genus, and in some other properties not belonging to the whole genus. Thus iron has all the characters of the class of metals, and certain others not belonging to the class. But the class 'metals' itself might be the species to a more comprehensive genus—'simple bodies;' and this might be a species in a still more comprehensive genus—'material bodies;' just as 'two-handed' might be a species compared with animal, and animal a species compared with living bodies, which include both vegetables and animals; so that genus and species are correlative terms, being both connotative general names; but the one connoting fewer attributes than the other, is on that account less exclusive or more comprehensive.

But there is one particular and important application of the term 'species,' founded upon the existence of a marked and distinguishable class of natural ob-

jects, which we must here point out. There are certain kinds of objects that agree with one another, and differ from all other things in a great and unknown number of attributes; so that their agreement with one another is very intimate, and their distinction from all other things very wide. Thus if we take human beings, we find that they have an exceedingly large and complex agreement, or they possess more features in common than we can enumerate, or than we may ever be able, after all our study of the human subject, to reckon up; for to know them all would be to attain the perfect knowledge of man. It is the same with many classes of animals. If we take the dog, we find that there is an almost inexhaustible fund of common features which mark the dog as a kind apart from all other animals and things. So iron, silver, phosphorus, are of this description: the specimens of any one agree with one another in all the properties discovered and undiscovered that attach to that one; the entire discovery of all these properties being the perfect knowledge of the species. Such objects are called 'lowest species,' or 'lowest kinds,' because they cannot be subdivided into others, having the same totality of differences from one another. Thus if we divide man into white, red, tawny, and black races, these cannot be called species in consequence of these distinctions alone: if all the difference between one race and another can be expressed in one single attribute, such as colour, or in two or three definite attributes, then these races are not different in kind, they are not specifically, or *in toto* distinguished; the subdivided classes are called varieties, and not kinds. But if it were discovered that an indefinite and unknown number of properties distinguished a Negro from a European, as in the case of a man and a monkey, or a dog and a horse, European and Negro would be different kinds. The classes that are not separate kinds may be exemplified by solids, liquids, and gases, of the same substance; for these differ only by a limited and assignable difference, all traceable to the one agency of heat. So houses, lands, rivers, are true classes, but they are not true kinds; for the extent of their agreement with one another, and of their difference from other things, is limited and assignable; very unlike the differences between iron and gold, which affect all the senses, and which ramify and show themselves in a boundless number of ways.

All the names of kinds are nouns; and although adjectives and abstract terms are formed from them, it is always a limited and imperfect derivation. Thus the adjective 'manly,' and the abstract noun 'manliness,' are very far from expressing all that is common to man; they only point out some one property which conspicuously attracts attention for some reason or another. But the names of classes that are not kinds readily take on the adjective and abstract form—as 'liquid,' 'liquidity;' 'circle,' 'circular,' 'circularity.' These derivations are perfectly strict and proper; and it is only such names as are formed from classes, not kinds, or limited and ascertained in their common features, that can properly yield adjectives and abstract nouns with a strictly logical application.

Nameable Things.

It is of importance, as a preliminary to explaining the nature of affirmations or assertions, to have a general view of the things presented to us for receiving names, and for becoming the subjects of such affirmations or assertions; in other words, it is convenient to possess a comprehensive classification of the whole of the things that can become part and parcel of the thoughts, conceptions, or knowledge of men. Mr John Stuart Mill, in his great work on Logic, has devised a classification of the universe of knowable and nameable existences as follows:—

1st, Feelings, or states of consciousness, or everything which the mind is said to be aware of, or which produces an influence upon it. These include all sensations, thoughts, emotions, activities, volitions, and whatever is said to be felt or entertained by the human mind. This is the most immediately ascertained class of the universe of things coming under our cognisance.

2d, The minds themselves which experience those feelings. We require to distinguish the mind from its susceptibilities, and to define it as the thing in which all these reside.

3d, The bodies or external objects that are the causes of those feelings, or states, or consciousness, and all the special powers or distinguishable properties of these bodies. We have already explained that it has pleased Nature to provide substances which have a manifold effect upon the human susceptibilities, leading to distinct conceptions, and the imposition of separate names for the various powers or properties thus made known. The world of outward objects—these objects being taken as wholes, and also as possessing each a numerous assemblage of powers, which must be named and described, as well as the total masses—makes one large class of our nameable and knowable things, and as such must be recognised in Logic. We can only be aware of these by their action on our minds; and hence it is necessary to class them subsequently to the states of consciousness or feelings which make them known, and which alone are properly present to the mind. The external universe does not require for our present purpose to be more minutely classified; the chief point regarding it being the point now stated as to the complex power of its individual objects upon the mind, upon which the whole of the abstractive process is founded.

4th, The Successions and Co-existences, the Likenesses and Unlikenesses, between feelings or states of consciousness, and between the outward objects that produce them. In addition to the individual feelings of the mind, and the individual objects of the world, we are led to take notice of their positions, movements, and similarities, or want of similarity. If thought and nature were dead and still, there would be nothing to mark but position; but as both are incessantly moving and changing, we must take cognisance of the movements, and see how one thing follows another. If no two things were ever alike, perception of Likeness would be impossible; but as the world has been constituted on the principle of repeating the same objects in innumerable circumstances, the examples of this must force themselves on our attention, and we must signify, by appropriate names or descriptions, that such likenesses occur, so far as we descry them. Our conceptions are at the mercy of the outward universe, and ought to follow it as closely as possible; hence our processes of naming, with the view of communicating our knowledge, ought to correspond to the same common source of sensation and thought. We must therefore, in addition to feelings, objects, and their properties, possess a means of describing the co-existences of these, their successions, their likeness, and unlikenesses; and beyond these there is nothing that we can take a hold of. We exhaust all that passes in our minds, and all that we suppose to pass in nature, in the comprehensive grouping of Feelings, Minds, External Causes of Feeling, and the Co-Existences, and Successions, Likenesses, and Unlikeness of these Feelings, and their external causes. The entire action of the universe on the mind of man presents nothing that is not included in these four heads.

Nature of Assertions or Propositions.

In our exposition of names, we made no reference to matters of belief or disbelief. We spoke of objects and of their properties, conjunct and single, and of the conceptions formed of these, and of the names and descriptions given of those conceptions; but a mere notion or conception is not a matter of belief. We must now, however, proceed to state the nature of assertions, affirmations, or propositions, which all mean things to be believed or disbelieved, and therefore to be proved or disproved. A matter of belief means something we can act upon; something that will enable us to do one thing for the sake of attaining some other thing. When we say 'bread is nourishing,' we do more than announce

an object, 'bread,' and a property, 'nourishing:' we tie these two things together with a bond of union which rouses the activity of the human mind, and causes it to set to work in some given course. Assertions are not idle notions, but things of power and might; they are the intellectual machinery that rules the greater part of human life. When a man feels the want of nourishment, and is reminded of the assertion that 'bread is nourishing,' he applies his active energies to procure the bread, in the full assurance that he will thereby have something more than meets his eye in a loaf: that he will have his bodily strength renewed, and his appetite gratified. Belief is the state preliminary to action, or the state disposing to action when some given emergency arises; and assertions or propositions are what call forth this faith or belief.

An assertion requires, in the first place, that there should be two things mentioned: it is not possible so to mention a single object as that it shall be a matter of belief or disbelief. Thus 'fire burns,' 'gold is yellow,' 'bread is nourishing,' 'the sun is the centre of the planetary motions,' each contains at least two things or notions coupled together. Fire is one thing, burning is a different thing, if there be any meaning or anything to believe in the assertion. But the mention of two things is not enough: the two names of 'gold,' 'yellow colour,' do not make an assertion of themselves; the asserting power is conferred by the verb 'is;' and we shall find that every assertion requires a verb, or that the verb is the part of speech which completes the force of an assertion, or has the power of causing belief or disbelief in the human mind. The question, then, arises—what is the import of those verbs which are the bonds of union between the things coupled together in assertions?

As assertions can relate only to the actual facts and appearances of the world, they must refer to some of the great classes of things above enumerated, as constituting the entire universe of the knowable. Accordingly, Mr Mill has shown that all possible assertions may be reduced to five general heads, determined by the fourth class of nameable things, or the class comprehending Successions, Co-Existences, Likenesses, and Unlikenesses. If we add to these four things the idea of mere Existence, we shall possess a summary of everything that can ever come to be asserted in any affirmation or proposition.

We may, however, premise, before illustrating this statement of the meanings of assertions, that propositions may be either affirmative or negative: they may either propose something for belief, or as a ground of confidence and action; or they may propose something for disbelief, forbidding us to accept such thing as a ground of action. This is the only real and permanent distinction among propositions as to the form of their making their assertion. Other divisions, as into simple and complex, and into categorical or unqualified, and hypothetical or conditional, are not fundamental divisions. Each complex proposition may be reduced to simple propositions; and the conditional or qualified assertions may also be put in a form resembling the categorical or unqualified.

It may be said, then, of assertions or propositions, that they affirm or deny some one or other of these five things—Existence, Co-Existence, Succession, Causation (a peculiar and important kind of Succession), or Resemblance. No proposition can be enunciated, no piece of knowledge or information conveyed, nothing believed or disbelieved, nothing presented as a guide to human action, that does not assert or deny of some thing or things one of these five attributes.

In the case of Existence, a single object or thing is sufficient material for an assertion—as when we say, 'the sun exists,' 'God is.' But in all the others, it is obvious that there must be at least two things; for the very nature of the attributes of co-existence, succession, and likeness, is to imply plurality—to co-exist, to succeed one another, or to resemble one another.

Propositions of Co-Existence are such as—'London is situated on the Thames;' 'the battle of Hastings was fought in 1066;' 'the sun is in the sign Aries.' And the assertions of the properties of things belong to the same class—as when we say 'silver is precious,' 'tigers are ferocious,' 'man walks upright.' We have remarked that nature produces objects that have a manifold action on the human susceptibilities; each separate action being commonly called one of the properties of the entire object. Now when we assert that certain properties of a thing accompany certain others, we make affirmations of co-existence. 'Gold does not rust,' is a proposition which may be interpreted to mean that a certain substance recognised by us as yellow, heavy, and of high marketable value (the popular and obvious characteristics of gold), has also the property of not rusting, like iron or lead.

Propositions of Succession will readily occur to any one. 'Night follows day;' 'Queen Victoria followed King William IV.;' and all the affirmations of historical narration are propositions of this kind. The distinction between geography and history is a distinction between the contemporaneous and the successive: the propositions of geography express co-existence and order in place; those in history, succession and order in time.

The particular case of succession entitled Causation, is one very important in respect to the order of the world, and to our knowledge of that order; and although the idea of a cause and effect is familiar and intelligible to most people, it belongs to Logic to clear it up, and to represent it with the utmost possible precision, so that there may not be any doubt hanging over it in the most obscure and perplexed instances which can possibly occur. We shall have to take this up at an after stage; and at present we need only remind the reader, that the succession of cause and effect implies a fixed and invariable bond of connection, such as is never to be interrupted at any time, or under any circumstances; we commonly recognise a sort of unfailing power in the cause to bring on the effect, which we may confide in to the very uttermost.

We have compared geography with history, as exhibiting generally the contrast of the contemporaneous with the successive; and we may likewise compare natural history, which exhibits the properties *conjoined* in the individual objects of nature, with the sciences of physics, chemistry, &c. which are sciences of causation, in order to contrast the contemporaneous things bound together by a natural and indissoluble bond, with the successive things bound together with the same indissoluble connection. The conjunctions of geography (such as 'the Atlantic divides Europe from America,' 'Africa is the country of the Negroes') are in great part loose and casual, and so are many of the successions of history; but the conjunctions described in natural history are firm and unalterable, and belong to the deep and fundamental collocations of creation; and in like manner the successions of cause and effect are nature's unalterable successions. The contrast between anatomy and physiology is a limited example of the same distinction: the delineations of anatomy refer to co-existing objects, bound together by nature's links for connecting the properties of kinds; the laws of physiology are laws of Cause and Effect. 'The diamond is composed of carbon,' is a proposition of fixed natural conjunction; 'heat liquifies solids,' is a proposition of fixed natural succession or causation.

The only remaining kind of propositions are the assertions of Likeness or Resemblance, which are totally distinct from assertions of contiguity either in place or in time; but they have the same natural basis as these—that is, nature, besides presenting contiguities, both loose and fixed, presents a copious store of similarities among the objects that she reveals to our knowledge. These similarities are usually considered to be of all degrees; but, strictly speaking, this is not the case. The idea of unequal similarity arises from the fact already alluded to—that a number of natural objects are often found agreeing in some of their properties, and not in others; and, speaking of the entire objects,

we say that they have only an imperfect or partial similarity. The most perfect similarity is what is called Identity—that is, taking the same object at different times, no change having happened to it meanwhile, we call the two appearances identically the same. Next to this is the similarity of different specimens of the same substance or kind.

The one science wholly founded on propositions of similarity is mathematics.

The procedure of discovering and verifying these different classes of affirmations is different for each; and it belongs to Logic to prescribe methods for them all. It requires one style of investigation and of proof to establish propositions of causation or of fixed succession, and another set of operations to determine the propositions of fixed co-existence; while the propositions of likeness are found in a way differing from either. Each of these methods will be alluded to when we come to speak of Induction.

Definitions.

By far the most important distinction in the whole science of Logic, or in what constitutes the essence of human knowledge, is the distinction between propositions and definitions; or between affirmations and conceptions, verbs and nouns. A definition we have already shown to be the accurate expression and description of some abstract quality of which we have formed a conception, after a comparison of the different objects agreeing in the possession of such a quality. We stated that the final step in the process of abstraction was the making of some accurate description of the property abstracted, whether by words, by diagrams, by models, or by some specimen that contains the quality as little mixed with others as possible. In short, the great end of a definition is to fix by some intellectual machinery the character of an abstract conception, notion, or idea. But we have just found that a proposition couples together two ideas, and cannot possibly contain less. A definition communicates a notion or idea to the mind, it gives us one conception more than we had previously, or communicates a perfect representation where perhaps we had only a vague idea before; but it gives nothing that can be called knowledge, nothing to be affirmed, or denied, or acted on; in respect of these matters, it is only one of the things that may enter into a proposition. Two abstract ideas duly connected may make a proposition; one idea never can. For the purposes of discovery and of the investigation of nature, both definitions and propositions have to be sought; but both must not be sought as if they were the same thing. A definition and a proposition usually agree in this—that they are both the results of generalising from a number of instances; but the generalisation of an idea, and the generalisation of a law or a conjunction of ideas, should never be confounded. The imperfect recognition of this vital distinction is a source of much error and perplexity, both in matters of science and in questions of truth and falsehood apart from science. In seeking a definition of an abstract property, we ought to muster the individual objects in which it occurs; compare them together in order to obtain a clear picture of their common property; and finally, invent some description, designation, or representation which will so express and fix it, that other people may be able to conceive the property with the same rigid accuracy as the person who went through the labour of making the comparison.

All definitions must refer to something which does not itself require to be defined, or which is plainly and clearly known to all men, and requires only to be named that it may be truly and justly conceived. Thus when the abstract property of roundness, or the circular form, is defined in geometry, reference is made to a central point and a straight line running out from, and revolving round it in the same plane. Now the idea of a point, a straight line, and a plane, although they themselves are formally attempted to be defined in geometry, are examples of things so clearly perceived in general, that mankind could not be mistaken in any conception made up of them.

For the sake of accurate reasoning, every general attribute whatsoever should be accurately defined. Hence a book of science must be a storehouse of definitions as well as of propositions, although these last alone constitute information or truth. It is common for parties in disputes to make each other define their terms—that is, to describe in some unmistakeable way the attributes intended to be expressed by the general or abstract words made use of. But it requires a high degree of advancement in any science to furnish perfect definitions of all the properties that it is concerned with. The generalisation and the verification of a definition is as much a process of discovery, and stands as much in need of human capacity and labour, as the generalisation and verification of a law. Hence it is only in subjects which have attained a high scientific development that accurate definitions are found. In the abstruse sciences of mind and society, good definitions are not in all cases attained, any more than good propositions. Thus the perfect definitions of 'will,' 'virtue,' 'beauty,' 'poetry,' 'genius,' 'civilisation,' can hardly be said to be as yet completely attained.

As the things which go together by the ordination of nature, or the conjunctions which, when expressed in language, form propositions, are more frequently made up of separate attributes than of complete objects, the importance of definitions as preparatory to propositions must be evident. Thus when we say, 'electrical excitement is always polar, or consists of two opposite excitements,' we state a proposition asserting the conjunction of two very abstract attributes; and the proposition could not be discovered, nor proved, far less affirmed and acted on, until a general idea was formed of electrical excitement, and likewise of polarity, by the process of generalising and defining. 'The magnet has opposite poles,' is an instance of the same: magnetism does not reside invariably in one concrete substance; it is a highly abstract property, sometimes found in one substance, and sometimes in another.

RATIOCINATION, OR ARGUMENTATIVE INFERENCE.

Having ascertained the import of affirmations or propositions, we come next to consider the nature of *proof*, or of the process that is gone through when an affirmation is said to be proved. In most cases of proof, one or more affirmations are put forward which are already believed or admitted to be true; and some new affirmation is derived from these, or said to be established as following or flowing from them. 'John has come to town: I saw him an hour ago;' is an assertion made and proved by the help of another assertion. 'You will get better by taking rest: I myself got round by that means;' is another example. It is a part of Logic to ascertain the nature of the connection between one proposition and another, that will justify the belief of the one on the faith of the other.

It has been shown by logicians, that when one assertion is proved by the help of others, there are always at least two previous assertions necessary to make the proof. These two assertions have been technically called *premises*, and the one that they prove is called the *conclusion*. In ordinary cases, one of the premises is a general proposition of any of the five kinds—namely, Existence, Co-Existence, Succession, Causation, or Resemblance; and the other premise is a proposition of resemblance. For example, 'the planets are round; Neptune is a planet, therefore Neptune is round.' Here the first assertion is a general proposition of co-existence, or an affirmation that certain bodies that circle round the sun have the attribute of roundness; or that the attribute of describing circles round the sun coincides with the attribute of roundness of form. The second assertion is, that Neptune is one of the planets, or is a body circling about the sun; or that he resembles the bodies called planets, or that his peculiarity of movement is like their peculiarity. The conclusion or inference is, that Neptune is a round body.

It is obvious that if we have obtained proof, or acquired certainty in respect to the two assertions or premises in this case, there can be no doubt about the third; for when it is shown that Neptune is entitled to be called a planet, that body is included in the sweep of the general proposition that all planets are round. There are, therefore, always two things necessary in a step of argumentative proof: in the *first* place, a general proposition has to be established; and in the *second* place, an identification has to be made out between the subject of the general proposition and the subject of the affirmation that is to be proved. This last point is merely the practical application of a general affirmation to a special instance. The other step—the establishment of a general proposition—is the business of a scientific inquiry, and has to be done once for all by the proper machinery.

The case we have now given of a step of deductive inference is an example of what is called a *syllogism;* and it used to be reckoned the chief business of Logic to lay down rules for the correct performance of this deductive inference, or for the shaping of valid syllogisms, the two assertions or premises being supposed to be proved, or to have been previously ascertained to be true.* But it is now considered that the most serious and difficult part of the process of arriving at true conclusions, is the establishment of the general propositions which include them. By what process do we come to be sure that all the planets are round—that all men are mortal—that all matter gravitates—that all chemical combinations take place in fixed proportions? We must not merely provide for the correct application of propositions which have once been proved, we must also provide for the proof of these fundamental propositions themselves.

INDUCTION.

Induction is the term applied to the process of forming and establishing general propositions, principles, laws, truths, or affirmations—that is, propositions which are applicable not to one case only, but to all cases that have a certain definable peculiarity; as when we say, 'gold is heavy,' in which case we affirm that all substances having a certain colour and lustre are also of great specific gravity.

The first question that occurs to us respecting these general affirmations is—how and when are we entitled to make such very broad assertions? We have no means of ascertaining the laws and coincidences established in nature, except the observation of what the world presents to us. If we see that the qualities of yellowness and a peculiar lustre are combined with heaviness, we are entitled to assert the fact in as many instances as we have verified by examination. In like manner, if we see that water quenches fire, we may assert that it is so in the cases noticed. But there remains the grand difficulty—namely, why are we entitled to say that these coincidences and successions take place not only in the cases where they have been observed, but also in the cases where they have not been observed, and in all cases whatever? For this is implied in every general proposition.

This question is answered by the fact, that nature is uniform. There is a certain class of coincidences or co-existences which we have already alluded to as tight co-existences, which are everlasting and unvaried, and need only one observation to tell how they will be in every variety of times and places; and there is a certain class of successions called Successions of Cause and Effect, that are of the like unchanging kind, being the same yesterday, to-day, and for ever. Hence, in these cases, one observation is as good as a million; we are entitled to express or affirm infinitely more than we actually find. It is from nature's repeating herself in endless ways that human labour is shortened to such an extraordinary degree, that a few years of the short life of man suffices for obtaining a very extensive mastery of the vast and varied appearances of the world.

We have asserted that nature is uniform in her coincidences of the properties of kinds, and in her successions of cause and effect. But, it may be asked, what proof have we to offer in support of this assertion, which is of such magnitude and importance as to be the foundation of our proof of all other assertions, and the means of enabling us to convert a single case of observation into an infinite belief?

There is no other proof to be offered for the uniformity of nature than the unbroken experience of the human race. Every age has found it so; and in the more recent times of human history, it has been tested in every possible variety of ways, and no valid exception has ever been recorded. There was a time when men might entertain doubts on the matter, or when the confirmation was but limited, and the apparent exceptions irreconcileable with the doctrine. But this time has now gone by, and the principle has come to be established upon a basis that seems impossible to be shaken; and all the future generations of men will rest upon it with unswerving confidence. Some have derived the proof of the principle from an instinct in human nature, which leads us to expect this uniformity; but this is to rest upon a most perilous assumption—namely, that the native instincts of men can correctly anticipate the laws of the outer world—an assumption indeed that is far from true. The very same instinct which leads us to expect uniformity in nature, also prompts us to believe that all other men are like ourselves; that our experience is the experience of the whole world; and that what is at variance with it must be false. It is the instinct that urges the inhabitants of a tropical climate to denounce as liars and impostors the people who assert that water can become solid like glass. Such an instinct is utterly untrustworthy, until corrected by the observation of the actual world; but it is extremely valuable as an impulse advancing in the same general direction with the results of our experience.

The laws of causation, or the successions of events established by nature, and invariably adhered to, make the first and foremost subject of inductive investigation. In this case the great problem given for mankind to solve is—to find the effects of all causes, and the causes of all effects.

The general maxim of the uniformity of nature does not always apply to the outward appearances of things. A south wind brings rain one day and drought another; and in many other cases the law of strict succession fails to hold good. The reason of this is discovered by a very little examination: the superficial phenomena of the world, the things that prominently arrest our attention, are not single trains of causation, but mixtures of many different trains; and the law of uniformity does not necessarily hold good, except in the simple and indivisible sequences of phenomena and events. No doubt if a certain number of causes acting together produce a certain amount of effects, the very same combination will always produce like effects; but it is not easy to make sure that two given combinations are really the same. In order to do so, we must first become acquainted with the simple causes one by one. Induction, therefore, in such a state of things, is essentially a process of analysis, or the separation of the complex threads of causation, with the view to determine the simple threads; and when we have once possessed ourselves of all these, we will be prepared to calculate the effects of any combinations of them. Nature rarely presents us with a cause and its effect standing alone. The usual case is to have a multitude of effects flowing from a multitude of causes. It requires, therefore, the whole analytic force of the mind to be devoted to their reduction to single couples of cause and effect. This frequently involves a very difficult operation of the abstractive faculty.

The great object of inductive inquiry being to ascertain among a multitude of connected things, which of them stand to each other in the relation of cause and

* For a brief account of the Scholastic or Syllogistic Logic, see 'Chambers's Journal,' No. 219, New Series.

effect, we have now to consider the methods of observation and experiment suited to this determination. By 'experiment' is meant the process of altering the arrangements presented by nature, and shaping new arrangements of our own to assist us in ascertaining the simple sequences of cause and effect. Thus if nature presented to our observation a confused and complicated train, and if we contrive to remove a great many of the circumstances, so as to reduce the train to a more simple sequence, we are said to proceed by experiment. If we find or observe a certain locality is exceedingly favourable to health; and if, in our wish to ascertain which of all the peculiarities of the place is the cause of the wholesomeness, we endeavour to put ourselves into situations where each circumstance is excluded in turn, we are said to proceed experimentally. Mr Mill has laid down the different ways of arriving at cause and effect by this experimental procedure, under the title of the 'Four Experimental Methods,' which he names the Methods of Agreement, of Difference, of Residues, and of Concomitant Variations.

'The simplest and most obvious modes of singling out from the circumstances which precede or follow a phenomenon those with which it is really connected as an invariable law, are two in number: one is, by comparing together different instances in which the phenomenon occurs; the other is, by comparing instances in which the phenomenon does occur with instances in other respects similar, in which it does not. These two methods may respectively be denominated the Method of Agreement, and the Method of Difference.

In illustrating these methods, it will be necessary to bear in mind the twofold character of inquiries into the laws of phenomena; which may be either inquiries into the cause of a given effect, or into the effects and properties of a given cause.

For example, let the antecedent be the contact of an alkaline substance and an oil. This combination being tried under several varieties of circumstance resembling each other in nothing else, the results agree in the production of a greasy and detersive or saponaceous substance. It is therefore concluded that the combination of an oil and an alkali causes the production of soap.'

Mr Mill states the method of Agreement in a formal canon as follows:—*If two or more instances of the phenomenon under investigation have only one circumstance in common, the circumstance in which alone all the instances agree is the cause (or effect) of the given phenomenon.*

By the method of difference, is meant the process of comparing two sets of circumstances—one containing the effect, and the other not; and where between the two we can see no difference except in one other particular. 'When a man is shot through the heart, it is by this method we know that it was the gunshot that killed him; for he was in the fulness of life immediately before, all circumstances being the same, except the wound.' This method is expressed as follows:—*If an instance in which the phenomenon under investigation occurs, and an instance in which it does not occur, have every circumstance except one in common, that one occurring only in the former, the circumstance in which alone the two instances differ is the effect, or cause, or a necessary part of the cause, of the phenomenon.*

The method of residues will be seen to be a carrying out of the same attempt to break up complicated trains, and to fasten down the invariability of sequence upon the true particulars where cause and effect operate. It is stated thus:—*Subduct from any phenomenon such part as is known by previous induction to be the effect of certain antecedents, and the residue of the phenomenon is the effect of the remaining antecedents.*

'There remains a class of laws which it is impracticable to ascertain by any of the three methods which I have attempted to characterise—namely, the laws of those permanent causes, or indestructible natural agents, which it is impossible either to exclude or to isolate, which we can neither hinder from being present, nor contrive that they shall be present alone.' Heat is an example of this kind of agents; we can neither divest bodies of their heat, nor exhibit it by itself and apart from all other things; and hence the methods above alluded to would entirely fail in determining what things are connected with it as cause and effect. To meet this difficulty, we have recourse to a method named by Mr Mill the Method of Concomitant Variations—that is, in such a case as heat, we observe what effects increase as it increases, and diminish as it diminishes. The method is expressed in general terms as follows:—*Whatever phenomenon varies in any manner whenever another phenomenon varies in some particular manner, is either a cause or an effect of that phenomenon, or is connected with it through some fact of causation.* We very frequently proceed upon this method of observing the effects of the increased or diminished quantity of things, in order to see what effects they have a tendency to produce, judging rightly that if one event be the cause of another, the two will rise and fall together.

There are two kinds of complications that are beyond the reach of any of these four methods, and require a distinct treatment. The one is termed the case of the Plurality of Causes, the other the Intermixture of Effects. By a plurality of causes is meant, that it sometimes happens that an effect may arise equally from several causes, creating, as it were, an ambiguity of causation. Thus a motion may arise from any one of a great number of forces; happiness or misery is produced by innumerable agencies. In such cases, the methods above stated are somewhat nonplussed, inasmuch as it may be possible to exclude one cause and yet keep in another. A still greater difficulty is presented by the Intermixture of Effects—that is, when an effect is not single, but complex. Thus the course of a projectile is not a single, but a mixed effect, or two different effects combined into one different from either. The discovery of the cause or causes, under such circumstances, cannot be effected by the Experimental Methods. But this leads us to the consideration of a method different from any of these, which has a vast range of efficacy in scientific research, and becomes more and more powerful as the sciences advance, or as discovery is extended. It is called the Deductive Method.

The Experimental Methods suppose that we take up a subject that is as yet fresh and unexplored, or where no great general principles have been attained. They are the methods adapted to the commencement of inquiry. But when one or two comprehensive laws have been arrived at, a great deal is to be discovered by following out the application of these laws wherever they are found to operate. Thus when the law of the perseverance of moving bodies was once discovered, it was made use of to explain many motions that would otherwise have remained inexplicable: such as the rotation of the earth, and the tendency of the planets to maintain their distance from the sun. In like manner, the discovery of the general law of reaction enabled Newton to determine the cause, and even for the first time to ascertain the existence, of the fluctuation of the sun in the centre of the planetary system. By the Deductive Method alone are we able to trace the operation of that class of causes which, by intermixture, are wholly neutralised, and produce no apparent consequences whatever—as in what are called the laws of equilibrium or counterpoise.

There are three different steps in the complete working out of the Deductive Method. The first is Induction, or the determination of the general law by the Experimental Methods. The second is the carrying out of the law to the explanation of all cases where it seems to apply, and especially the tracing out of the action that would result from two or more principles acting in combination. Thus the Deductive Method applied to trace out the cause of the curved motion of a projectile, would consist in combining together the law of perseverance with the law of accelerated motion under a constantly-acting force, and in determining what would be the path that a body would describe under the two actions. The third step, which is Veri-

fication, consists in comparing the effect deduced with the effect witnessed, to see if the two exactly agree: the agreement being the proof that the laws supposed are the laws that operate in the case. When Newton arrived, by induction, at the law of universal gravitation, and found that it decreased as the square of the distance increased, he applied this deductively to explain the attachment, or perpetual fall, of the moon to the earth. He calculated what would be the amount of the moon's deflection, supposing gravity were the cause of it; and then compared this calculated amount with the observed amount, and found a perfect coincidence. The same process he applied successively to the planets, and proved that each of them was detained from running off in a straight line through space by its gravitation towards the central sun.

Sometimes a law is assumed to exist for the sake of trying how it would explain appearances, although no such law has been discovered by a regular inductive process. This is what is called making a *hypothesis* or assumption. If, on trial, the assumed law is completely verified by agreeing with the facts, this of itself may be a reason for believing it to be a true law of nature. Thus, for example, Dalton's doctrines of atomic affinity were at first mere suppositions, or hints thrown out for trial and experiment; but it turned out that they had been so successfully conceived, as to stand the test in every instance where they were confronted with the actual phenomena.

The laws thus employed deductively, are the most general or comprehensive laws of nature, or the statements of what happens through the entire range of appearances that nature has connected with a single cause. At all events, they are the most general laws that man has been able to discover; they, moreover, refer to the smallest and simplest trains or threads of causation, or to the indivisible sequences of events. Thus the law of gravitation expresses the simplest train of causation that can be conceived; there are the fewest possible circumstances or conditions that can be mixed up in the production of any effect. This remark is necessary, in order to distinguish ultimate laws from derivative laws, where additional circumstances are introduced which make the thread more complex, and the case more limited in its application. Thus the law, that the planets move in ellipses, is a derivative law, involving the operation of two ultimate laws under certain arrangements or collocations; these arrangements are, that the planet should have been projected at a distance from the sun, in a certain direction, and with a certain speed, bearing a proportion to the above-mentioned distance. As only a very few bodies comply with all these conditions and arrangements, the law of elliptic motion is more limited in its application than the more general laws of perseverance and gravitation. When such laws are got at deductively, they are called Derivative Laws; when got at inductively, they are called Empirical Laws. The law of ellipt motion was first discovered inductively by Kepler, and afterwards proved deductively by Newton. As given by Kepler, it was therefore only empirical. All inductions of complicated sequences, or trains of causation, are of the empirical kind, and have the peculiarity of being of very limited application; they must be confined to the cases where all the conditions and arrangements are strictly contained. If we observe that a draught of cold air is the cause of catching cold, the sequence is only an empirical one, and is confined to cases where certain conditions are present; and until the conditions are strictly defined, the observation cannot be stated as a general fact even of the empirical kind. Many of the assertions made in every-day life are of this undefined description. An effect is assigned to a cause, without stating the exact conditions and circumstances necessary to insure the sequence.

When we turn from the Inductive Problem of Causation to the other kinds of propositions—namely, Co-Existence, Order in place, and Similarity—we find a somewhat different process of invention and proof requisite. The most important class of propositions of co-existence are such as assert the properties of kinds, or the attributes that always accompany one another in the objects presented to us in nature. Thus when we affirm all the properties of gold, iron, oxygen, oak, horse, man, we propound propositions of co-existence. These must be sought inductively, and proved by the method of Agreement alone; neither any of the other Experimental Methods, nor the Deductive Method, is applicable. They are also peculiar in not being amenable to any great comprehensive generalisation, like the law of Universal Causation. We can never, therefore, have anything but a cumulative proof of such coincidences—that is, a proof founded on a long series of confirmations, with the entire absence of any exception.

On the propositions of Similarity mathematics are founded. For an affirmation of likeness, the ultimate appeal must be to the senses, and personal experience. When we say three and four are equal to seven, we mean—if the aggregate-named three is put along with the aggregate-named four—the joint effect is the same as the effect of the aggregate-named seven. The truths of geometry are derivative laws, where order in place is one of the conditions or circumstances: the ultimate laws being the laws of equality, or the laws of mathematics in general.

Before closing the subject of Induction, we may advert to the grounds of the credibility or incredibility of things presented to our belief for the first time, and not proved by any independent evidence of their own. When a fact is asserted that we do not know to be true or false, but which agrees with some great established induction, we may say that it is *credible*, and needs only some ordinary degree of testimony to make it actually believed. Thus if we are told that a great avalanche broke away from a snowy mountain-height, and acquired in its fall such force as to sweep away everything that stood in its course, we reckon the assertion credible, because it is merely an instance of the working of a great natural power. But when it is alleged that the spectres of dead men come and tell secrets to the living, we call the assertion incredible, because it contradicts all the ascertained laws of things, and is not supported by any one generalisation, or any of the usual habits and proceedings of the world. We are so accustomed to the fact, that all nature's operations are on the great scale, and are to be found recurring in many different circumstances, that we are entitled to look with suspicion upon any isolated phenomenon. Such phenomenon is not accounted worthy of being entertained until it is shown that there are more of the same character to be found, or that it can be brought under some of the previously-established generalities of nature.

THE HIGHER ABSTRACTIONS.

The inductive determination of the ultimate laws of nature, or of the indivisible threads of cause and effect, requires in the great majority of cases that the phenomena should be viewed, not in their ordinary aspect, but through some artificial representation suitable to their inmost nature, or to the mode that they are linked together in the order of causation. Thus if we desired to ascertain the precise cause of the heat given forth by burning coal, or the single indispensable antecedent of this effect, we should find that in order to fix upon this antecedent, it is necessary to acquire a set of entirely new notions respecting the substances concerned. One important material in the act of combustion is invisible, and cannot be represented to our minds except by a complicated train of associations: moreover, it has to be singled out of an aggregate of other invisible matters, and to be defined as having peculiar properties, which must also be conceived by the understanding, as they cannot be witnessed by the senses. To ascertain that the combination of a particular gas called oxygen, with the black particles of coal, is the antecedent of the production of heat, demands a very great amount of previous preparation, in order to ren-

der visible to the mind materials and processes that are invisible to the eye.

The possibility of making inductions as to the laws of phenomena, requires that none of the circumstances or agents in a given case are hidden from the view, either by their natural obscurity or by their being accidentally out of sight. Hence a great part of the labour of discovery has consisted in obtaining the indirect knowledge of the invisible agents and modes of action that occur in the world.

Of the things that elude our senses, the first to be noticed is the whole class of gaseous bodies. The atmospheric ocean is the type of these. In the seventeenth century, the mechanical characters of this mass of matter were brought to light. Toricelli and Pascal proved that it weighed or pressed on the earth the same as solid bodies. It has also been shown to be a self-expansive mass, or to be made up of mutually repulsive particles, which tend to fly asunder to the utmost lin its allowed them. But to represent these properties to the mind, we require to call in the aid of comparisons and types from the visible classes of things; and if such comparisons are perfectly correct to the extent that we employ them, we can depend upon all explanations made through their means.

Another very important class of things that do not show themselves directly to the senses, is the phenomena of the attractions and repulsions that subsist between material masses and particles. These cannot be seen by the eye except in the movements that they produce: they may be felt by the muscular sensibility, as forces or powers, but this feeling gives no assistance to the scientific conception of them. The ultimate forces of adhesion and repulsion that reign among the atoms that make up the larger masses of matter, are exceedingly difficult to ascertain and to represent to the mind; and the only means we can adopt with them, is to imagine each particle as a visible mass, and to conceive the situation and attachment or repulsion of this mass to some second mass, and so on till we have figured to ourselves as many as will make up a fair specimen of the aggregate in question.

The subtle agencies named heat, electricity, magnetism, and chemical affinity, are of the same invisible kind: they can only be conceived as embodied in certain actions of visible substances. The effects that they have upon such of our senses as they act upon, give us no key to their real character and position in the links of causation established in the world; on the contrary, these sensations give us an entirely false clue when we attempt to search into the hidden course of things. Thus our feelings of heat, or the action it exerts on our sensitive frame, stand in the way of our investigation of the ultimate laws of its phenomena; and we require to cast these feelings aside, and trace its workings through the higher senses and the reason.

The agency of light that reveals so many other things, is itself the most inscrutable of all known phenomena. The laws which regulate its action are not written on its superficial appearance: and the little that is known of it has been acquired by very roundabout efforts of the understanding. Newton, to express the fact of the solar rays producing different colours through a prism, had recourse to the notion that the white ray is a compound of seven coloured rays, which seemed to suit the appearances so far, but cannot be said to be rigorously applicable.

In human affairs it is often equally difficult to present to the eye the real powers or trains of causation that govern the facts. The sequences of the human mind cannot be seen except as shown in outward actions; and there are often many intermediate links lying between two successive outward appearances. These intermediate links must be imagined by the help of some circumstances suitable for embodying them; and the invention of these appropriate representations is a part of the process of the scientific investigation of mind. Thus the laws of intellect are expressed under the figure of the association of ideas; and different kinds of association are pointed out and discriminated under the designations of Contiguity, Similarity, &c.

This grand operation of passing from the superficial to the deep aspects of natural phenomena, and of finding artificial representations of such things as have no sensible aspect, has been generally styled Abstraction, or the formation of Abstract ideas; but the ordinary acceptation of this phrase scarcely extends so wide as the things we have now alluded to. We have already explained the more limited view of abstraction, and shown it to consist in the determining and expressing of the feature common to a number of things that are felt to have some similarity. This feature may be represented in many ways—as by a specimen chosen as an average of the whole, by a diagram, or by a descriptive definition. When any laws of causation connect these classes of things with other things, the determination of the common ingredient is essential, in order to state the ultimate or indivisible train of sequence. Thus if we say that the burning of coal causes heat, we must find the abstract idea of burning, or the fact common to all cases of the action; and this common fact will be the true antecedent of the evolution of heat.

The creation of good representative ideas of the obscure phenomena of nature, is one of the most difficult efforts of scientific genius, and is totally distinct from the power of experimental inquiry. It requires a peculiar boldness and felicity of mind, which belongs to but a very small number even of such as expressly devote themselves to the study of science. It was great in Newton, in Lavoisier, and in Dalton; and accordingly they gave a vast impulse to human thought, and opened up many new outlets of experimental investigation. But every now and then experimental inquiry feels the want of some great new conception to grapple with, and express, a set of subtle and complicated appearances, that cannot be brought under the dominion of law for want of this very thing.

One of the greatest examples of a true abstract idea, which is at the same time a great artificial conception of what cannot be conceived properly by means of the superficial aspect of the cases where it occurs, is the idea of polarity, or of a force which never exists except double, there being always two opposing forces joined together in the same mass. In the instance of the magnet, the character of the force is more directly apparent than in any of its other forms; but even in this instance there are appearances that contradict it, and prevent its being entertained by the mind. It is only by a very gradual operation, where experiment has been combined with the exercise of thought, and by the trial of many modes of conceiving and expressing the great hidden fact of magnetical and electrical phenomena, that the representative or abstract idea of polarity has been gained by the human mind. The experimental methods alone are helpless in such inquiries; the creative and constructive intellect must work in company with experimental inquiry, in order to bring the understanding face to face with the things that are not revealed to the ordinary senses.

There has always been in the world a recognised classification of things called 'just' and 'justice;' but for scientific purposes, it is necessary that some representation of the feature common to all such things should be got at by the comparison of instances, and by the operation of the constructive intellect in shaping a form of expression applicable alike to all.

The higher order of Abstractions obtain their expression by the putting together of Abstractions of an inferior order. Thus the definition of 'justice' would involve the simpler idea of 'equality' in some shape or other. So Mr Mill, in his definition of Property, makes use of several ideas that must be supposed to have been previously defined and settled, or that adequate representations have been already constructed for. Property, he says, in substance, involves the *right* of each person to the *free use* of whatever they have acquired by their own labour, or obtained by *free gift* or *fair agreement* from others who have so acquired it. The terms 'right,'

'free gift,' 'fair agreement,' are abstractions supposed to be previously settled and understood, otherwise the definition is insufficient. But it is by using one class of clearly-represented and well-defined ideas from which to construct others, that all the progress of human thought is achieved.

FALLACIES, AND THE DISSECTION OF EVIDENCE.

A few observations on the nature of the more common fallacies, will serve to extend the illustration of the principles and ideas that have already been advanced. There are various classes of fallacies, some of which may be enumerated as follows:—1*st*, Misconceptions arising from the suggestions of uncultivated human nature; 2*dly*, Fallacies consisting of errors in ratiocination or deduction; 3*dly*, Fallacies of bad induction, or violations of the Experimental Methods; 4*thly*, Erroneous abstractions; and 5*thly*, Fallacies arising from the defects and misuses of the instrumentality of reasoning—namely, Language.

We have sufficiently discussed the difficulty that the human mind experiences in getting at nature's own point of view of the trains of causation which support the movements of the world. The first impressions of outward things upon the mind are very far indeed from the correct impressions. In the first place, the appearances presented to the senses are often the reverse of the fact, as in the case of the heavenly motions. In other cases, we are led to believe that things are where they are not, as in the way that we are misled by the refraction of light. Our feelings of what goes on within ourselves often suggest an exceedingly false view of the reality. For example, the feeling we sometimes experience of a rush along the nerves, gives us the belief of an actual fluid motion taking place through the body. Our feeling of weight or gravity renders it very difficult to admit the notion of the antipodes, and of the round form of the peopled earth. In the next place, we have very strong instincts, that pervert our views of nature still farther. We are very apt to suppose that what we see and experience is the true type and resemblance of what we do not see, or that nature works everywhere exactly as with us. Having no means of conceiving the unseen except through the seen, and being apt to believe that our conceptions of things correspond to the things themselves, we are led to assume that particular attitude of mind termed narrowness of view. Hence the discredit thrown upon the statements of the early travellers respecting remote countries, such as China, Abyssinia, and aboriginal America. Another inveterate prepossession of human nature arises from the notions that we form of force, power, and causation, arising from our own sense of effort, action, and resistance. We firmly believe that the activity and motions of the world are carried on by some gigantic personality, in exactly the same way that human beings go through their various operations upon the outer world. There is hardly any fallacy so completely opposed to the truth of things as this. The active agency of human beings, in moving matter from place to place, always implies close contact with the things acted on. The great peculiarity of natural powers, is their acting through distance, or with intervals of empty space between the agent and the thing acted on. Gravity extends from heaven to earth, or through distances of millions of miles. Heat and light are equally remote in their influences. But in the first consideration of these powers, the idea of close contact, derived from human experience, was so overpowering, that it was considered impossible that these distant actions could be maintained without some medium extending all the way from one of the bodies to the other. This is the real origin of the doctrines of an ethereal fluid pervading space, to exercise the powers of gravity, light, and heat. But for the misleading influence of our own sense of force, the facts would have been at once assumed as the ordinances of nature, that one body can gravitate to another through empty space, and that one body can heat or light another apparently in the same way; and we would have been content to ascertain what relations these actions had to distance, to the nature of the bodies, and to the other circumstances concerned in producing the effect. The human race is not yet emancipated from this fallacy.

The fallacies of erroneous ratiocination or deduction are what are treated of under the scholastic or syllogistic Logic, which professes to lay down all the correct forms of the relation between premises and conclusion. The defect of this logic is in stopping short where it does, or in confining itself to a very small portion of the region of fallacy. When an argument is presented to our consideration, as bearing out some particular conclusion, it may often be necessary to trace back the inductions and abstractions that the propositions are made up of, as well as to see that these propositions bear out the conclusion. Thus let us suppose that the following argument were used against suicide: 'Suicide is an unsocial act, therefore it ought to be treated by society as an offence entailing disgrace upon the memory of the individual.' Like all other steps of deductive reasoning, this must consist of three different propositions, two premises, and a conclusion. One of the premises, called the *major*, must be a general assertion or affirmation, which must contain the *predicate* of the conclusion. Thus in the present case, the major premise is, 'All unsocial acts are offences entailing disgrace upon the individual committing them.' The minor premise contains the *subject* of the conclusion, and is in this case, 'Suicide is an unsocial act.' The conclusion to be established is, 'Suicide does or ought to entail disgrace on the actor.' Now, as far as the form of the reasoning goes, this is perfectly correct. If the first and second affirmations or the premises are true, the third is true likewise: a scholastic logician could find no fault with the argument. But it is clear that we ought not to be content with this; we must carry our scrutiny into the propositions themselves—considering each of them to involve an induction or deduction, and two abstractions; and we must see that these processes have been correctly performed, or whether they can be verified by the admitted facts of the world. If we take the major premise, 'Unsocial acts are punishable offences,' we find ourselves called upon first to ascertain the exact definition of the class of things here called unsocial acts, or to put into some less ambiguous description the acts meant. Now when we cast our mind about on the actions referring to society, we find that there are some directly hostile to social interests; that there are others quite indifferent; and a third class that are not hostile, and are yet not indifferent, simply because men choose to put an artificial importance upon them—such as the observance of conventional ceremonial. Now if unsocial acts mean breaches of the laws enacted for the common interests of society, the argument will have a totally different turn from what it would take if we mean by these acts things that society has no real concern with. It would be admitted, without further discussion, that antisocial acts are rightly punishable by society. If we were now to pass to the minor premise, 'Suicide is an unsocial act,' meaning thereby an act hostile to the interests of society, a new scrutiny would have to be commenced as to the truth of this conjunction. The terms of the proposition being clearly settled, we have to see whether it agrees with the facts of social workings, that suicide is opposed to any one great social interest, or whether, among the consequences or collaterals of this particular act, there is to be found any one or more that conflict with the good of human society. This stage of the discussion plainly involves an examination of the actions and reactions that occur among associated human beings, or of the influences exerted by one man upon his fellows, through the common bonds that unite each to all the rest. We must apply to the mass of social facts the experimental and deductive methods, with a view to determine all the links of causation established in this region of things. The natural method of proceeding in an in-

stance like the present, would be in the first place to enumerate all the accompaniments that we can find connected with the act of suicide in general; that is, with all acts of suicide, or with the great proportion of them. In the second place, we should have to determine whether any of these accompaniments were among the things that have an antisocial character, or obstruct any of the general interests of society. Nothing less than such a procedure as this is sufficient for the determination of the question raised. But it is obvious, that by going through this process for one question, we will necessarily settle a number of points that will serve for many other questions. Certain general ideas will have received clear definitions, and certain propositions will be inductively or deductively established, and will be so many additions to the stock of human knowledge and certainty. This is the tendency of all genuine studies, or of every decision that is come to after a due course of inquiry and examination under the guidance of sound logical principles. All decisions made in any other way are labour expended in return for error and delusion.

From such an instance as we have now given, it will be seen that fallacies may lurk in the deductive, inductive, and abstractive steps of an inference, one or all; and hence the reason for adopting these designations as the heads of a classification of fallacies. An error must exist whenever any one of these processes is insufficiently performed; and to rectify the error, we must revert to the rules for their accurate performance, which are founded on what we have seen to be the essential characters of each process.

A very large class of fallacies is included under the Abuse of Language, which is the instrument of the greater part of our reasonings, and of all of them that can come under the province of Logic. Many of these fallacies are not to be distinguished from such as come under the other heads. But Language has certain tendencies of a fallacious kind, that make a class apart from all the rest. It is apt to stand in our minds in the room of the facts that it expresses, and thus to obstruct our view of the realities of the world. Being a powerful instrument for fixing ideas in the mind, it gives equal aid to the false and to the true, and thereby perpetuates the reign of whatever errors have once been clothed in words. We have formerly seen that the use of a general name is a perpetual affirmation of similarity among the things to which it applies. Hence if a wrong generalisation has been made in any case, or if a certain number of things have been falsely declared to have a common feature, the general name is the instrument of circulating and maintaining the falsehood in the world. Another evil that arose out of the nature of Language was connected with the tendency that there is to recognise the separate existence of whatever has a separate name. Hence arose the doctrine of realism, or the notion that abstractions had a distinct and dependent existence, and that concrete objects were actually formed by the union of their abstract constituents. Thus wisdom, virtue, government, roundness of form, hardness, which have each a distinct name, and are distinguished by the human intellect, were thence supposed to have distinct existence, or could be found apart from the complex objects that we call 'wise,' 'virtuous,' 'round,' 'hardness,' &c. The great scholastic controversy of the middle age turned upon this question, and it was not till the seventeenth century that it was generally admitted that these abstractions had no more than a mere intellectual or verbal distinctness of existence.

The forms of Language are liable to mislead us in the way of confounding verbal with real propositions or definitions with affirmations of principles. The definition has the same verbal form as the proposition. 'A triangle is a three-sided figure,' and 'A triangle has two of its sides greater than the third,' have the very same structure of enunciation; but the one is a definition, or a declaration of the nature of the thing that we name 'triangle;' the other is a proposition, or an affirmation of the conjunction of two things—namely, the triangular form, and the fact that two of the sides taken together are greater than the third. The definition is not a thing of affirmation or denial in the same sense as the proposition; what it affirms is not a law of nature, but the conjunction of a name and a thing; and the truth or falsehood of the assertion is not dependent on any facts of nature, but on human convention. The mistaking of a verbal for a real proposition, owing to the frequent similarity of their form, is one of the most common fallacies arising out of the nature of Language.

THE LOGIC OF THE SCIENCES.

The general laws and abstractions that are arrived at by the methods above described, are collected together under separate heads, according to the subjects to which they relate; and each collection of generalities is called a Science. When the aggregate is formed on the plan of taking in all that belongs to one distinct department of natural phenomena, we have a *pure* or an *abstract* science. Thus the collection of laws that has reference to the natural group of organised and living bodies makes up the pure science of Life, which has been termed *physiology* or *biology*. But when the truths of nature are brought together from different regions of phenomena to serve some practical purpose, or to explain some local appearances, the aggregate is a *mixed* or *concrete* science. Thus in the science of medicine, the laws of physical, chemical, and physiological actions are brought to bear upon the practical end of curing disease; and in the science of geology there is a similar gathering of doctrines to explain the complex appearances of the earth's crust. The classification of the abstract sciences will therefore follow the different kinds of action that are made use of in nature; while the mixed and concrete sciences will be as various as the practical objects of life, and the local contiguities of different modes of operation.

M. Auguste Comte was the first to carry out to the full this great distinction among the sciences, and to give a rigorous definition of the abstract division. The abstract sciences, according to him, are Mathematics, Astronomy, Physics, Chemistry, Biology, and Sociology, corresponding to the six primary or fundamental classes of natural properties and actions. Mathematics has reference to number, quantity, and extension; Astronomy is the science of gravitation; Physics the science of cohesive masses of matter; Chemistry includes the atomic affinities of unlike substances; Biology treats of the laws of living beings; and Sociology has reference to the structure of human society. The order now given has been shown by M. Comte to be the true natural order and succession of these sciences, being the order of their first discovery, as well as the order of their easy comprehension and natural dependence. At present, in speaking of the general or abstract sciences, we shall prefer to include Astronomy with Physics, and to detach the science of mind from the comprehensive branch relating to living beings. The arrangement will then stand thus: Mathematics, Physics, Chemistry, Biology (Life), Psychology (Mind), Sociology (Society). These lay hold of six different groups or classes of natural appearances and laws; and there is not, as far as we know, any fact, process, or operation in the world, that does not come under some or other of these six heads. The knowledge of Mathematics, Physics, Chemistry, Vegetable and Animal Physiology and Anatomy, the Human Mind and Human Society, is the knowledge of the whole of nature. If we are versant in all the laws and abstractions of each of these six subjects, we are prepared to understand every event that can possibly occur in the world. We may not have carried out these laws to all possible cases of practical and local application; but we are prepared to comprehend and appreciate every instance of their being so carried out.

The natural dependence of the abstract sciences in the order now given may be explained thus:—Each one is dependent on all that lie above it, and is a basis of

all that lie below it; and as we proceed from the top to the bottom of the list, we pass from the most simple and most universal properties and laws to such as are more complex and limited; in other words, there is a connection of dependence and of generality: the first sciences are the least dependent and the most general, the last are the most dependent and the most special. *Mathematics*, which treats of magnitude and numerical properties and laws, extends to all the materials and operations of the universe; everything that exists has the property of being more or less, and is subject to the laws of quantity. The phenomena of all the other sciences come under the scope of mathematics, and often depend directly on its doctrines, while these doctrines are themselves quite independent of all other properties. Physics and Chemistry would be completely upset if any of the Arithmetical or Geometrical laws or rules were to change; but no alteration in the physical or chemical properties could affect the numerical properties of things: three times six would be eighteen, and the binomial theorem would be eternal, whatever revolution was produced in the laws of heat or atomic proportions. But if we take the *physical* properties of matter, which include the laws of the aggregation of bodies, and the four agencies of gravity, heat, electricity, and light, we find that these are dependent on the numerical properties of matter, and independent of its chemical properties. Physical properties are superadded to form and size, and vary with these attributes, while chemical properties are a subsequent addition. The *chemical* powers are modified by physical states, but physical powers are not modified by chemical characteristics. Gravity acts upon all bodies the same, whatever their chemical affinities may be, and would continue to act though these were abolished. In like manner, the *vital* properties of matter are modified by the numerical, physical, and chemical properties, without reacting upon these so as to alter their character. So the laws of *mind* are still more complex and dependent, and so much the more limited and special. Not only all matter, but all possible or conceivable existence, shows mathematical attributes; all matter shows physical characters; a certain portion of matter is placed under the sweep of chemical combinations and decompositions; a select fraction of this is organised into the forms of life; and a still more limited portion is employed in connection with the appearances of mind. Unless we know all that can happen from numerical combinations, we cannot explain physical phenomena: we need both numerical and physical, as well as chemical, knowledge to comprehend chemical phenomena; and all the three are required as a preparation for the science of life. Any attempt to explain one class of properties while we are in ignorance of the previous classes, is an inversion of the order of things, and is nearly as hopeless as the ascent to a height without passing through the intermediate spaces. The laws of phenomena obtained previous to the understanding of all that should precede such phenomena, can at best be but empirical laws, and must be strictly limited to the circumstances where they have been observed. The laws of physiology are almost wholly empirical, owing to our imperfect acquaintance with the physical and chemical operations concerned in the vital processes.

Each of the six fundamental sciences has a logical character of its own—that is to say, the method of proceeding for establishing the general laws and properties that make up any one science varies with the nature of the phenomena included in it. Hence the cultivation of each confers a distinct and separate discipline on the intellectual faculties. Astronomy, for example, carries to the highest perfection the two processes of observation and deduction. In no other science have the means and devices of accurate observation been so much improved; and, on the other hand, as all the phenomena can be deduced from the ultimate laws of mechanics, combined with the law of gravitation, with the most complete numerical accuracy, the science affords a perfect instance of the deductive method of arriving at truths. If we pass from Astronomy to terrestrial Physics, including the laws of solid, liquid, and gas, heat, mechanics, hydrostatics, optics, electricity, &c. we find ourselves in the domain of experiment, which is entirely inadmissible in the celestial physics; and the cultivation of the experimental devices, of excluding and including known causes and circumstances, is in the highest degree practicable. For the last two centuries, Physics has been the great field of experimental research; and it may be said that the art of accurate experimenting was first acquired in this field, although it has since been extended to other branches. The experiments that decided the weight and pressure of the atmosphere, Newton's experiments on light, the researches of Dr Black on latent heat, and the very extensive experimental inquiries that have been made within the last seventy years on Electricity, may be alluded to as illustrious not only in the history of Physics, but in the progress of the human reason. Chemistry is, like Physics, a highly experimental science, but its distinguishing feature is its having to provide for a classification of the materials of the globe according to their composition. As it shows that the earth consists of about sixty simple substances, which have almost an infinite capacity of combining into compounds, it has to ascertain the circumstances attending on all combinations and decompositions, and to make a regular classification of all the resulting bodies according to the simples that make them up. For this it has to invent a grand system of nomenclature and arrangement, such as is not required to the same extent in any other science, but is not without its use, apart from the immediate purposes of chemistry. The science of life requires, as its peculiar auxiliary, a system of classification by genera and species, and carries this device to its utmost perfection. In like manner the sciences of mind and society have their peculiarities of method, or their special contributions to the logical cultivation of the human intellect. The lessons that all the leading sciences agree in cultivating are—the supremacy of reason over sense and instinct, and the necessity of bringing all assertions to the test of rigorous proof. We shall now advert to the fundamental sciences, with the view of bringing prominently forward the peculiarities of the classes of phenomena which they severally include:—

The science of *Mathematics* is divided into two great branches—the one Abstract, including Arithmetic, Algebra, and the higher or transcendental Analysis; the other is called Concrete, and takes in Geometry and General Mechanics. The Abstract branches consider number and quantity in general without reference to any special things numbered or quantitatively estimated. The Concrete branches refer to peculiar kinds of quantity: the one, Geometry, referring to space and the forms of things occupying space; and the other, General Mechanics, being devoted to motion and the things necessary for expressing motion—namely, space and time. Mathematics proper, however, is usually considered to terminate with Geometry.

Arithmetic reposes upon the ten figures and the decimal notation. Without inventing names for the successive numbers, and adopting some principle for expressing shortly and systematically the higher sums, no nation could ever progress in Arithmetical calculation, or in the arts and sciences where it is much required. The chief business of Arithmetic comes to be the reducing of all possible combinations of numbers to one universal form, or to the gradations of units, tens, hundreds, &c. Thus the multiplication table, which contains the fundamental laws of the science, merely serves to show how to reduce products of any two numbers to a product where ten shall be one of the factors. 'Nine times seven are sixty-three,' means that if a row of seven be taken nine times, the sum-total will be the same as six rows of ten and three over. When all products are reduced to the one decimal scale, their comparison among themselves becomes much more easy than if they were kept in all variety

of scales. If we wish to compare nine times six with eleven times five, we find it most convenient to bring both into products of tens, by making the one fifty-four, and the other fifty-five.

Algebra is a higher process than Arithmetic, and has been defined the reduction of equations. Its main peculiarity lies in putting two different complex expressions that are equal over against one another, and then in operating upon the two by adding, subtracting, &c. the same things from both, so as still to preserve the equality, and at the same time to bring the equation to some simple form that will give the value of a single ingredient of the original expression. Thus an easy question in Algebra would be to find a number which, when added to its square, would give 56. Here an equation would be formed by putting 56 on one side, and on the other an expression of a number added to its square, the number being represented by a letter (such as x), and the business would then be to operate on this equation till it is reduced to another with nothing on the one side but the representative of the number itself, in which case the other side would give the actual number in arithmetical figures. The higher analysis was invented by Newton and Leibnitz to solve such questions as computing the areas and circumferences of curved surfaces, and the spaces and times of accelerated and retarded motions.

Geometry treats of the laws and properties of lines, surfaces, and solids, straight or curved. It has two branches—Special and General Geometry: the one is exemplified in Euclid, who treats each figure by itself in succession, as in triangles, circles, &c. General Geometry treats whole classes of figures at once by stating them in Algebraical Language.

General or Rational Mechanics lays down the first principles or laws of motion, and applies these to calculate the effects of all possible kinds of forces, single or combined. It makes an important distinction between forces that are counterbalanced so as to produce rest or equilibrium, and forces productive of movement; this gives rise to two branches named Statics and Dynamics. To determine the path of a projectile is a simple mechanical problem: two forces are given, which, separately, would produce certain known effects, and the question is to find the effect of both acting together.

Astronomy is the link between General Mechanics and terrestrial Physics: it is a case of motion and forces where the natural agent, gravity, is brought into the question. Experimental induction having traced out the law of gravity as the power concerned in keeping the heavenly bodies together, the principles of mechanics enable us to compute, by the help of mathematics, all the consequences of this agency—that is, if we find that the moon is acted on both by the earth and by the sun, with a certain energy depending on the mass and distance of each, it is possible to calculate what course she will describe under the two actions, and where she will be at any specified time. Or the great problem of Astronomy may be stated thus: Given the present position of any one body in reference to all the others that act upon it, and given the effect of each of these for a certain instant of time, and also the body's own proper movement, to find where it will be an hour, a day, or at any time, hence; this, it will seem, is only a more complicated case of the question as to the path of a projectile. There are certain terrestrial actions—as the Tides—which come under Astronomy from their being caused by distant gravitation.

The first branch of *Terrestrial Physics* is commonly termed the Properties of Matter, meaning thereby the laws and peculiarities of the aggregation of matter into solid, liquid, and gas. The next agency that we come upon after gravity, is the cohesive power that binds the atoms of bodies into masses of more or less firmness of structure. It requires us to recognise as a first principle of the composition of the material world, that all its substances are made up of exceedingly small particles or atoms, which are gifted with powers of mutual attraction and repulsion; and under the action of these powers become, according to the way that they happen to be adjusted, solids of more or less compactness, liquids, or airs. These powers of adhesion are very varied and unequal, and in this respect contrast with the uniformity and regularity of the gravitating force. They not only differ in different substances, but they differ in the same substance, in consequence of there being a grand pervading energy of nature supplied in the first instance by the sun, which is able to overrule and modify them. In fact, the adhesion of atom to atom in a solid or liquid is the result of a natural attraction between the particles resisted up to a certain point by a repulsion infused into them from without, by the all-pervading influence that we term Heat, and which we speak and think of as a subtle substance or fluid like air, but which is more properly a grand relation of mutual action between all material bodies, whereby they affect one another's atomic constitution whenever a peculiar balance or equilibrium is disturbed. It is very inconsistent with our rude instinctive notions of force, to suppose that because some change has come over the interior attractions and repulsions of one body, a set of analogous changes will be propagated to all bodies in the neighbourhood till some state is given to each consistent with the repose of the whole. But having once admitted the principle of action through distance, without any intermediate filling up of the interval between the bodies, there is no reason why we should not prepare ourselves for finding other cases of the same kind of action though varying in the details.

The first division of Terrestrial Physics being the Laws of Material Aggregation, and the second the Laws of Heat, it is usual to follow these up with Practical Mechanics, Hydrostatics, Pneumatics, and Acoustics, which involve no new first principle not contained in the previous departments. There, then, remain the two subjects of Electricity and Light, each involving a distinct natural agency. Electricity has now been completely generalised, and shown to be a wide ranging power of the *polar nature*, which puts on many forms according to its material connections, but invariably maintains the character of a polar or double force. There are no less than six or seven subordinate branches, falling under two grand divisions, which are distinguished by the terms Statical or Reposing, and Dynamical or Current Electricity. The first of the subordinate branches is the oldest—namely, Magnetism, where the polarity is most conspicuously exhibited, from its acting on large masses of iron or other magnetic metal. The second of the Statical branches is Frictional Electricity, or the electricity of the common machine. This branch was created in the latter half of last century by Franklin and others. The first of the Dynamical branches is termed Voltaic Electricity, or the excitement of the voltaic pile, which first showed the close connection between electricity and chemical action. Next follow Electro-Magnetism and Magneto-Electricity, being the laws of the derivation of magnetism from electricity, and conversely of electricity from magnets. Thermo-Electricity is the derivation of the excitement from heat, which completes the proof of the connection between these two great natural powers. In addition to all these, electricity has to be considered in its relation to animal and vegetable bodies, as being both produced and expended within the living organism.

The subject of Light has, in some of its bearings, been set forth with great distinctness, as in all the mathematical relations of its incidence, reflection, and refraction on surfaces; but as to its origin and ultimate action on the surfaces that it renders visible, and on the receiving surface of the eye, nothing is yet known. Most bodies, when heated to some given temperature, become luminous; but it does not appear that any of their heat is wasted in supplying the rays of light; so that although an undoubted connection subsists between light and heat, it is totally different from the relation of heat to electricity. Hot bodies give light

in addition to their heating power; but if such bodies are made to yield electricity, their heat is consumed or wasted in the act of being turned into electric excitement. No means has yet been found of investigating the changes wrought in the surfaces of bodies by the action of light; but the invention of the Daguerreotype seems to be a beginning in this direction.

Chemistry is related to Physics through Heat and Electricity. It treats of the circumstances and laws of the combination of simples into compounds, and the resolution of compounds into simples. The kind of combination here meant is something quite different from mechanical mixture, as when sand and lime are put together to make mortar; it is different even from solution. It takes place in fixed proportions, and ends in producing out of two substances a third so different from either, that it could never be suspected to be made up as it really is. Chemical combinations likewise give forth heat, or produce that general disturbance in the atomic condition of surrounding bodies, that goes under the name of raising their temperature. The chemical properties of a substance [illegible] power of entering into combinations, or [illegible] tions, with other substances; a body [illegible] can exhibit no chemical relation; hence [illegible] of the idea of binary combination in chemistry [illegible] there is no reason to suppose that three things may not combine together in the same act as well as two.

Combination and decomposition being the great facts of chemistry, it became an accurate science when the laws of these processes were ascertained by Dalton. A great part of chemical research during the last forty years has been devoted to finding the simples that go to make up the complex substances of the globe, the possible combinations of these simples, and the numbers to be assigned to each as indicating the proportion that they bear in combining with one another. Devices have had to be invented for bringing about combinations and decompositions in all possible cases, as it often happens that these cannot take place in any obvious or direct way. Chemistry is usually divided into Inorganic and Organic. Organic Chemistry treats of the chemical composition and actions of the substances that are formed in the vegetable and animal processes. As distinguished from the materials presented by the mineral and inorganic world, these substances are all very complex. Sugar is by no means an extreme example of organic complexity of combination; but one of its atoms contains twenty times as many atoms of simples as an ordinary inorganic acid, such as oil of vitriol. The products of the animal tissues are far more complex than even this. The number of substances in nature that are chemically distinct may amount to hundreds of thousands, giving thus a prodigious choice for human purposes when once they come to be properly known. There is scarcely a single vegetable or animal species that does not yield some peculiar and characteristic chemical compound.

Organic Chemistry is the link connecting chemistry with the science of living bodies. It is necessary to know fully all the physical and chemical properties of the tissues and substances used in vegetable and animal life, in order, by their separation according to the experimental method of residues, to ascertain what functions are due to vital powers and properties, rightly so called. Thus the act of digestion is performed partly by the physical action of solution, and partly, it would appear, by chemical combination; but when these are allowed for, there still remains a portion of the effect to be ascribed to a power different from either.

The general science of *Life* is divided into Vegetable and Animal Anatomy and Physiology. Anatomy is understood to mean the description of the organised structure of living bodies; and Physiology describes the processes and changes that go on within them.

The great foundation peculiarity of an organised structure is, that it is made up not of atoms, but of cells, which have the power of breaking up and giving birth to other cells from a nucleus in their interior or in their walls. These cells adhere together, and form tissues, which, in the living state, go continually through the process of decay and renewal, by the operation of the bursting of old cells and the growth of new. The contact of a cellular mass with certain kinds of unorganised matter is sufficient to convert the whole of this matter into vital tissue, by making it go together into coherent cells; the principle of like producing like, or of the communication to a shapeless mass of form and organisation by the touch of what is already organised, being one of the laws of vitality.

The grand difficulty in physiological science is to explain how so small a point as the seed of a plant, or the germinal matter of an animal, can contain within itself such a definite impress as to determine exactly the character of the future expanded being. But we ought to consider, that although the whole futurity of a man may at one stage be contained in two or three cells, yet each of those cells, in comparison with the ultimate atoms that make it up, is like the whole of St Paul's as compared with a single stone; and therefore [illegible] abundant room for its containing all the essential characteristics of the full-grown individual, although they cannot be traced even by the microscope.

The recent discoveries in anatomy go far to simplify the animal structure. Professor Owen has lately completed a most important demonstration in respect to the vertebrate skeleton, or the bony framework of all that class of animals that have a backbone, as distinguished from shell-fish and the other creatures where the hard skeleton surrounds the fleshy and soft parts. He has shown that all these animals, from the fish and reptile, up to man, are made on one pattern, varied to suit their different peculiarities; and that a fundamental or general skeleton can be assigned as the point of departure for the whole. What is still more singular, this fundamental skeleton is a repetition of the same piece from head to foot. In fact, if we take one of the vertebræ of the backbone, we have an example of the simple piece, which, by being repeated and modified, makes the whole skeleton of a man, a quadruped, a bird, a fish, or a reptile. Four vertebræ joined together, and having some of their parts more expanded than usual, constitute the head and the two arms. So that to make the skeleton of any animal, what is required first is a sufficient number of these vertebral cross pieces; and in the next place, a determination of the extent of growth that is to take place in their several parts, so as to suit the demands of the species proposed to be created. Professor Owen has been able to identify every bone of every animal of the vertebrate class with the corresponding bone of every other animal, through all their changes of form, and also to assign the portion of a vertebral cross-piece that every one of them sprung from. As regards the complicated structure of the head, Mr Owen has had the glory of completing the identification through the whole species, and of finally clearing up all the doubts and perplexities that were left hanging around the subject by the most illustrious of his predecessors. One magnificent idea may now be said to reign through this wide region of nature's works, which includes the nobler half of the entire animal creation.

As the *mind* of man is a portion of the living system, and as a special organ is devoted to its action on the framework, the study of this organ—the brain—under anatomy and physiology, might naturally be supposed to be the prelude to the science of mind. In this point of view, psychology would be the natural sequel to the general science of life. But it so happens that this is not the only way of approaching the subject of mind: had it been so, we should have been in total ignorance of the mental phenomena until within the last few years; for it is only of late that any progress has been made in tracing the laws of mind from the anatomy of its material organ. There are two other great sources of knowledge on this subject—namely, the outward appearances and manifestations of thought, and feeling, and consciousness; and the inward sense

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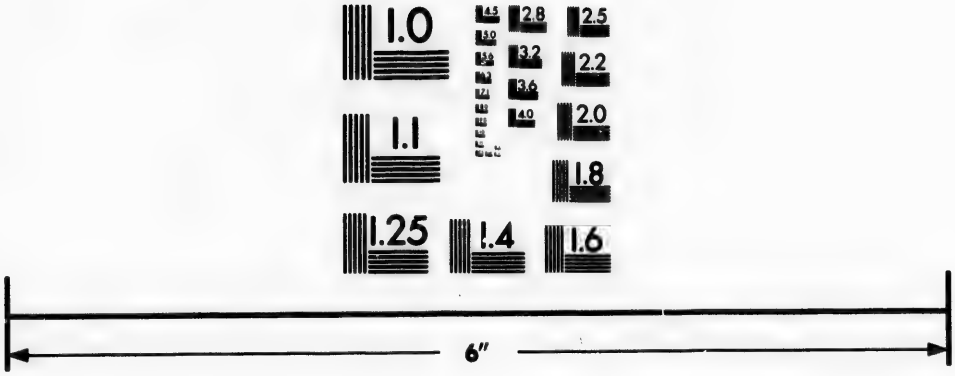

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that each individual has of what passes within himself. These have been illustrated in our previous number (71) on the HUMAN MIND.

But there can be no doubt but that the future progress of anatomical and physiological discovery will act powerfully in throwing light upon the laws and properties of mind. It is not the dissection of the brain alone that we depend on: the structure of the organs of sense and of the muscular system, which are the terminating points of the great proportion of the nervous threads, is of equal consequence. But no part of the system is unimportant in its bearing upon the thoughts, feelings, actions, and volitions of the mind. And if ever the laws of mind should be completely traced through the medium of the anatomy of the framework (a thing scarcely to be hoped for), psychology would become purely a dependent branch of biology; but in the meantime it possesses an independent existence, and it has in all ages been studied, and in some measure understood, without the help of any of the other abstract sciences that stand before it. This is perhaps the only apparent break in the strict dependence of the six fundamental sciences.

The great peculiarity of the method of psychology henceforth must be the reconcilement of the indications of the three different sources of knowledge—anatomy, external manifestations, and consciousness. No principle of human nature can be finally accepted, till it is verified in all the three ways.

Sociology, or the science of human *society*, comes last of all, as being most complex, or as involving all the phenomena of the previous sciences. The arrangements of society depend on the properties of the inorganic and organic world on the one hand, and on the character of the mind of man on the other. The life of men and of societies is restricted by the mathematical, astronomical, physical, chemical, and vital laws and conditions of the surrounding world, and is rendered more perfect in proportion as these are better known.

The more immediate dependence of the structure of society on the peculiarities of the mind of man, has enabled the subject to be studied along with this last from the very dawn of human speculation, and while all the preceding sciences were in their infancy. But it has been shown by M. Comte, that every advance in these sciences has been accompanied with some corresponding advance in the mode of viewing social questions; so that all history attests the existence of a real dependence under the outward appearance of independence.

The greatest simplification that has been made in the complicated subject of society, has arisen from carrying out a distinction derived from the anterior sciences; the distinction in Mechanics between Statics and Dynamics; and in Biology between the powers that maintain organic life and the powers that bring about the progress of the being from one stage to another. In society, the terms Order and Progress express the two corresponding ideas. Order means the maintenance of the peaceable workings of any one society; Progress means the advancement from one arrangement to another of a superior kind—as from the state of slavery to the state of liberty. By discussing the two subjects apart, all the questions relating to society and history are at once freed from the largest share of the embarrassments and difficulties that have always surrounded them.

The doctrines of Social Order are more particularly dependent on the laws of human nature, and are advanced in precision exactly in proportion to the accuracy of our knowledge of these laws. The fundamental idea of society being the harmonious co-operation of a multitude for the better attainment of common ends, and the first step in the working out of this idea being the setting up of a central government, or ruling power, the grand requisite of good order is *obedience* to this power. Where the government is obeyed, order reigns, whatever other evils may exist; where successful disobedience has occurred, there is disorder or anarchy. To secure obedience is, therefore, the problem of Order; and this must be accomplished by connecting the government with some of the most powerful reigning impulses of the human mind. If the sentiment of filial obedience be very strong, and if the people can be induced to consider the supreme civil ruler as a father, they will be disposed to render him obedience with the whole force of their filial devotion. If the religious sentiment is high in a people, and if they can be made to believe in the Divine right of kings, obedience may be secured from this source. If society is so constituted as visibly to be for the advantage of the majority of its members, the sentiment of self-interest will suffice to keep up the spirit of obedience. It will thus be seen that the supports of Order are such of the mainsprings of human action as can, for the time, be brought into harmony with the principle or pretence that lies at the foundation of the existing government. Hence the character of the people is an important consideration in determining the means of securing their obedience.

Order not only implies a harmonious relation between the mass of a people and their central government—it extends to all the smaller associations included within the greater. The proper constitution of local governments, of the spiritual government, of the family, of the relations of master and servant, teacher and pupil, is a matter of adjustment according to the prevailing impulses of the individuals concerned, and no one rule can be made universal in any of the cases.

Progress, which is also termed Civilisation, means the advancement from one state of Order to a higher, or to a state where a superior class of the impulses and capacities of man are brought into action. When a government, based on the superstitious prostration of the mind, gives place to one recognised by the reason, on the grounds of its contributing to the well-being of the society, a step of progress has been achieved. So, when a clear knowledge of affairs in a ruler, instead of the arts of oratory, is the means of gaining a people's confidence and co-operation, the society has entered a higher stage of advancement.

The proper meaning of Civilisation is the application of intelligence to the improvement of the human condition. It includes all that is not derived immediately from nature; in other words, nature and civilisation together make up the whole of human existence. The instinctive capacities of men are the immediate gift of nature; the powers acquired by the use of intelligence and will, confirmed into habits, and transmitted by instruction from age to age, are civilisation. The original genius, or inventive capacity of man, is the origin of everything included in human progress. Consequently civilisation consists of as many distinct streams as there are divisions in the arts of life and the creations of the human intellect. The *industrial arts*, the *training arts*, the *healing arts*, the *arts and forms of social intercourse*, the *art of government*, *morality*, *religion*, *science*, the *fine arts*, *literature*, and the *art of living*, are all included in this one comprehensive designation.

But it is especially important for our present purpose, which is to consider the dependence of the different branches of knowledge, to call attention to the fact, that although we have named eleven different branches of civilisation, there is one that is at the centre of the whole, or so related to every one of them, that if we concentrate our regards upon it as we pass along the stream of human history, we shall thereby detect the very essence of what progress there may have been. This central and predominating part is *science*, meaning thereby more particularly the abstract or fundamental sciences as we have now sketched them out. Science is the perfect work of the human intellect, its highest achievement in the search after truth, and the very touchstone of its capacity to grapple with the appearances and realities of the world, and to form such conceptions as can be relied on in practice. This connection of the progress of science with all the collateral branches of civilisation, and with the great revolutions of the world, has been pointed out for the first time in all its extent in the 'Cours de Philosophie Positive' of M. Auguste Comte.

NATURAL THEOLOGY—ETHICS.

NATURAL THEOLOGY is that branch of logical science which comprehends the discovery of the existence and attributes of a Creator, by investigating the evidences of design in the works of creation; and in an enlarged sense, it refers to the probable intentions of Deity with regard to his creatures, their duty, and conduct. It cannot but appear to every rational mind, that a subject involving such important views and considerations is full of the deepest interest, and may be made the agent of much intellectual improvement. It is incumbent on us to read the wisdom of God, and his admirable contrivance, in all that we see around us and above us, and which pertains to the universe to which we belong. Independently of the pleasure, and perhaps worldly advantage, which the study of Natural Theology may produce, it will be equally serviceable in keeping alive feelings of piety and devotion. As Lord Brougham has very appropriately remarked, 'even the inspired penmen have constant recourse to the views which are derived from the contemplation of nature when they would exalt the Deity by a description of his attributes, or inculcate sentiments of devotion towards him. "How excellent," says the Psalmist, "is thy name in all the earth! thou hast set thy glory above the heavens. I will consider the heavens, the work of thy fingers; the moon and stars which thou hast ordained."'

It is worthy of remark, as showing the depth and solidity of the foundation on which rests the existence of a supreme, intelligent, and beneficent First Cause, that the farther we push our discoveries, the more clearly are the Divine perfections exhibited. It is not merely true that, on a superficial view, we perceive the necessity of believing that a limited and changing world, such as that on which we dwell, could neither exist without being produced, nor be the author of its own existence; and that there must therefore be, beyond the range of our senses, an independent and uncreated Essence, without beginning, without bounds, incapable of change, intelligent, ever-active, all-pervading; but it is also certain that those views are not only uncontradicted, but fully established by the most minute survey of the objects within the sphere of our observation; so that he who penetrates the deepest into the secrets of nature, only multiplies proofs of that most sublime and most animating truth, that 'verily there is a God' who made and rules the universe. It is difficult to understand that strange moral obtuseness which has induced a certain class of writers to reject this; for grant but one assertion, which is—and it is not easily to be questioned—that there exist in nature indisputable traces of design, planned with wisdom, directed by goodness, and upheld and accomplished by power, and it follows that there also of necessity must have been a *wise, a good, and a powerful Designer*.

Let us suppose ourselves cast ashore upon some island previously unknown to us; we immediately proceed to examine the appearances which present themselves, in order to discover if any traces exist of human inhabitants. To ascertain if such beings there existed, it would not be necessary that they should actually be seen by us. In our wanderings we might come upon a hut bearing all the marks of occupation; we might see the roots of the trees which had been felled to form it, and other tokens of the recent presence of man upon the spot; and did we desire to discover something of their character and habits before we presented ourselves to their notice, it is most probable that sufficient data would be also afforded on which to found an opinion. Were the habitations we discovered merely wigwams, or rude enclosures destitute of the conveniences of civilised life; or were the furniture, the weapons, or the instruments in and around them such as barbarous nations generally use, we might reasonably argue that we had found the dwelling of an untamed savage. But if, instead of this, we find the surrounding land trenched, enclosed, and cultivated; should we find the common articles of European husbandry, and the common utensils of a European household, we should naturally draw the inference that we had reached the abode of an emigrant, who had thus reared around him the attributes of civilised life. Much more a few additional observations might reveal to us, and enable us to form conjectures, bearing the aspect of probability, concerning the people among whom we had fallen. Now it is in this way alone that we can argue respecting the Author of all things, and discover proofs and demonstrations of a first supreme Cause. To prove that the formation of all things was the result of DESIGN, it is only necessary to show that they are in general, or in so far as we can discover, admirably suited to the uses and purposes to which they are to be applied—that their arrangement is perfectly harmonious—and that it is impossible that any chance could have thrown them together in a way so happy. To discover if this design can be evidenced or demonstrated, it is necessary to seek through the various works of creation with which we are surrounded; and the more minute we make our inspection, the more likely shall we be to perceive the deduction. If there be some departments to which our senses have a readier access than to others, and which we can therefore more readily examine, from these especially we ought to deduce our result. It may be that we shall find many things which, from the deficiency of our observing faculties, we cannot understand, nor discover the uses or consequent design which they display; but still if, in the course of our inspection, we find every part admirably adapted for a specific purpose, and teeming with the most convincing evidences of design, then we may with safety, and in the spirit of true philosophy, infer that in those objects which, from their nature and our imperfection, we cannot so completely investigate, a greater degree of light would tend to confirm the result to which our previous observations, among other things, had led us.

DESIGN IN THE PLANETARY SYSTEM.

To the uninstructed eye, the earth which we inhabit appears on a clear night to be surrounded by a numerous host of radiant points, which, rising in the east, move majestically through the sky until they reach the western horizon, when they set or disappear; and so completely does this idea commend itself to the mind of an observer, that it requires a considerable effort to conceive how it can be otherwise. But science has taught us that this is a mere illusion, and the discoveries of Copernicus and Sir Isaac Newton have established the truth suggested by Pythagoras upwards of 2000 years before the time of either of them, that the apparent motion of the heavens is the consequence of the real revolution of the earth every twenty-four hours upon its axis; that, with relation to the earth, the sun is stationary, while the earth every year completes a journey round him; that the planets are globes similar to our own, revolving at once upon their own axes, and round the sun; that the moon is a satellite or attendant upon the earth, accompanying it in its course, and at the same time describing every month a circular orbit round it; and that to several of the other planets are attached similar moons or satellites, bearing to them a corresponding relationship.

By referring to our article ASTRONOMY, in which the number of the planets, and their distances from the sun, with other particulars, are noted, it will be seen that the earth which we inhabit is but a very small point,

even in the *solar system* (as the concourse of planets round the sun has been called), and that it forms but a part of one magnificent and resplendent whole. But to ascertain the marks of a designing mind in this mighty mass of brilliant wonders, let us turn our attention to some of those particulars regarding them with which we are acquainted; and it must be confessed that, if we are to suppose them mere masses of matter unclothed with aught bearing analogy to our vegetable productions, and uninhabited by beings either sentient or rational, it will be difficult to see why any of the arrangements connected with these bodies, so far at least as they themselves are concerned, and apart from their attractive influence upon our own world, should be either beneficial or the contrary. It is solely on the *conjecture* that there are organised beings on their surface to be warmed, and nourished, and upheld, that we can argue regarding such arrangements; and making this conjecture, we shall find that there are some very remarkable apparent contrivances for ministering to their comfort and happiness. It has been supposed that a planet so far distant as Uranus, or even Jupiter or Saturn, must suffer from an extreme deficiency both of light and heat; hence it has been argued that they are necessarily unfit for the sustenance either of animal or of vegetable life. But when we consider that even Uranus possesses ·248 times the light afforded by our full moon, it will not be difficult to believe that, with a somewhat more acute power of vision than we possess, the inhabitants of that planet, if formed like ourselves, may be quite able to engage in employments which require considerable minuteness of perception. Besides, to compensate for the deficiency of light derived directly from the sun to this planet in common with Jupiter and Saturn, there is afforded the subsidiary benefit of several moons or satellites to reflect light upon the surface when the sun has withdrawn his beams; neither is it probable that the inhabitants should miserably perish from cold; for putting out of view the possibility that they may be formed with constitutions adapted to a more frigid climate than that of any portion of our world, we must remember that heat is not dependent altogether upon the body from which it originates, but is regulated in a very great measure by the nature of the body to which it is transmitted. Keeping this in view, the planet Mercury may be as cool, and Uranus as warm, as our own globe, although they be at such different distances from the great source of heat. This, however, can be [illegible] subject of conjecture alone; and it is only valuable [illegible] showing that we have no reason to suspect the go[illegible] of the Creator in having placed some of his worlds in situations which at first sight might be supposed necessarily incapable of affording even the most essential accommodations to organic existences.

Of all the planets, Saturn presents us with the most singular example of design in reference to this subject. When viewed through a telescope, this beautiful orb is seen to be surrounded by a double circle of 50,000 miles distant from any part of its surface. This apparatus consists of two concentric rings, separated from each other by a space nearly 3000 miles in breadth, and moving round the planet at the extraordinary rate of a thousand miles a minute. Now there is one use of this appendage, whatever may be its other purposes, which is very apparent: it must contribute much to enlighten and beautify the globe to which it is attached; and a very little reflection will show the effect it must have in this respect. What a magnificent brilliant spectacle must these rings present to the inhabitants of Saturn! During its more than fourteen years of summer, the night must be enlivened by the bright reflection of this brilliant arch extending its luminous curve from the eastern to the western horizon; while even during the day, the sun must be materially aided by it in shedding light upon the world to which it belongs. 'There is no planet in the solar system,' says a late writer, 'whose firmament will present such a variety of splendid and magnificent objects as that of Saturn. The various aspects of his seven moons, one rising above the horizon while another is setting; a third approaching the meridian; one entering into an eclipse, and another emerging from it; one appearing as a crescent, and another with a gibbous phase; and sometimes the whole of them shining together in one bright assembly: the majestic motions of the rings, at one time illuminating the sky with their splendour, and eclipsing the stars; at another, casting a deep shade over certain portions of the planet, and unveiling to view the wonders of the starry firmament—are scenes worthy of the majesty of the Divine Being to unfold, and the rational creature to contemplate.' Of the other planets it is unnecessary individually to speak; our knowledge of them is extremely limited, and we may simply remark, that in most of them the same causes exist which in our globe produce the various seasons. To the causes of the seasons, further than that they are the result of the influences of the celestial bodies, we will not here allude. To the arrangement of these, and to the forethought and all-pervading knowledge and goodness of Him who designed them, are we, in a word, indebted for the opening beauties of spring—the full glow of summer, arrayed in flowers and clothed with verdure—the sober and sear leaves of autumn, with its aureate fields and happy harvests—and the cold, but not desolate winter, which even in its frigidity serves a valuable purpose in the scheme of the natural world. In these arrangements we see proofs of the care, the power, and the beneficence of that great Being who was the cause of all things. To what else, indeed, shall we trace the primary fact, that of all the heavenly bodies connected with our system, the sun alone, situated as he is in the centre, possesses undivided light, while the planets which surround him are all dark bodies receiving their light from him? There is no reason, in the nature of things, why a body placed in the centre of a system should give forth light and heat, while those revolving round it should be destitute of them. Yet we find it to be so: and we perceive the consequence of this arrangement to be not only most beneficial, but absolutely indispensable to the existence of the organised beings with which these orbs may be clothed or peopled.

But there is another view of the system of worlds to which our earth belongs, that strongly corroborates the existence of a creating and presiding Being. We mean the provision which is made for its perpetuity, notwithstanding the existence of so many conflicting forces—any one of which, if the system were differently arranged to what we find it to be, might in the course of ages derange the relations which the different bodies composing it possess towards each other, and precipitate the whole into confusion, only equalled by that chaos from which, by might and power, it was called. It will hardly be necessary minutely to explain the causes by which the earth and the other planets are kept in a continual state of rotation round the sun; but as perspicuity is one of the chief objects at which we aim, a few words on this subject will not be out of place. Let it be understood, then, that in every body of matter there exists a certain tendency to rush towards every other body, and that the larger, and denser, and nearer, any two bodies are, the greater is that tendency, and it will easily be comprehended that the sun, the largest of all the bodies in our system, should attract every other orb with a degree of force regulated by the size, the density, and the distance of each; so that, had all these bodies at first been placed in a state of rest in the universe, they would immediately have begun to move towards the sun, and thus in the course of time would, one after the other, have reached and been amalgamated with him in the form of one vast and irregular mass. But at the creation, this result was prevented by communicating to the planets an impulse at right angles to the diameter of their orbits, which, combining with the force of attraction—that is, the power of the sun in drawing or attracting the planets towards himself—caused the planets to revolve round the sun. If each of the planets, however, were to revolve round the sun, with no other prevailing power to interfere

with their motions except these two—namely, the attraction of the sun, and the original impulse at creation, they would of course continue as they are throughout all ages; but this is not the case. In the words of Mr Whewell, 'each of them is acted on by all the rest. The earth is constantly drawn by Venus, by Mars, by Jupiter, bodies of various magnitudes, perpetually changing their distances and positions with respect to the earth. The earth, in return, is perpetually drawing these bodies. What in the course of time will be the result? The cause acts perpetually, and it has the whole extent of time to work in. Is it not, then, easily conceivable that, in the lapse of ages, the derangements of the planets may accumulate, their orbits may change their form, their mutual distances may be much increased or much diminished? Is it not possible that these changes may go on without limit, and end in the complete subversion and ruin of the system?' What might have been the case had the balance of power, so to speak, in our system been differently disposed, it is not easy to say; but that all which is here suggested as possible would actually take place were a capricious or ignorant hand to interfere in the distribution of these forces, may assuredly be affirmed. We should soon have 'years of unequal length, and seasons of capricious temperature; planets and moons of portentous size and aspect, glaring and disappearing at uncertain intervals; tides like deluges sweeping over whole continents; and perhaps the collision of two planets, and the consequent destruction of all organisation in them both.' As the solar system exists, however, so nicely is it adjusted, that the deep inquiries of several of the philosophers of the last and current century, founded on the most complicated calculations, have shown that its arrangements are stable—that although there are, and may be perturbations, there are invariably proportionate compensations; so that whenever a maximum has been reached in the derangements of the system, it must necessarily begin to revert to its ancient order, and the restoration must in the end be as complete as was the derangement. It would require a hardihood greater than we can easily conceive to exist in the human mind, to view this subject, and to deny, after all, that a perfectly wise, beneficent, and powerful Being originally made, and has since sustained and governed all things.

It is proper, before leaving the heavenly bodies, to advert to the fixed stars. If little be known respecting the planets, still less has been ascertained regarding these more distant bodies; but it is by no means an unedifying employment to contemplate through them the immensity of creation, and thus elevated, to draw the conclusion that the Being by whom they originated must indeed be infinitely glorious. Had there been no other design on His part than thus to strike the mind of man with a sense of His magnificence and grandeur, no surer method could have been adopted to impart the lesson. The mind is bewildered when it dwells upon the glories which astronomy develops; and it cannot find words lofty enough to express its sense of the intelligence it discovers, or the proofs of the power, and wisdom, and goodness it perceives.

RELATIONS BETWEEN MAN AND EXTERNAL NATURE.

Leaving the evidences of design that are to be deduced from the contemplation of the heavens, let us regard some of the relations that exist between man and external nature, and consider the wonderful adaptations to each other which they exhibit. There can be no blank in nature, and consequently no body is isolated; all more or less influence each other, and it is of some of these relative influences that we are about to speak. Man is attached by the laws of gravitation to the earth which he inhabits, and is surrounded by an atmospheric medium capable of exercising certain influences upon him; these influences are modified to be subservient to his wants, and *designed* to be adapted not only to his necessities, but to those of every living thing, whether plant or animal, that exists. The air which surrounds us exercises, in consequence of its extent, a pressure on the human body equal to about 31,536 pounds. But why do we not sink and miserably perish beneath this immense weight? It is by the reaction of the elastic fluids contained within our bodies that we are enabled to support so enormous a pressure. Here we find a mutual relation between us and the air, which cannot be interrupted without mutual injury. Suppose this weight to be withdrawn from our bodies, what would be the result? The expansibility of the fluids contained within us would have no restraint; they would dilate, burst through the solids which contain them, and destroy the individual. Place any animal beneath the receiver of an air-pump, and withdraw the air, the result is very apparent. We feel more or less the effects of any sudden change of atmospheric pressure, but still the density of the air is well adapted to the wants of man: had it been greater, our energies would have been oppressed, as by an unnatural load; and if less, insufficiently sustained, as by a defective support. The senses of hearing and smelling, too, which depend for their protection on a medium density of the air, would have been either insupportably intense or defective. Again, the atmospheric pressure materially affects temperature. If a certain quantity of air contains a certain quantity of heat, it is clear that it must be equally diffused throughout it; and if the same air be contained in less bulk, or if the pressure be greater, the heat is increased in the same ratio. In the same manner, if the pressure be lessened, the air expands, and with it the heat is diffused over a greater surface. By compressing air, we can produce a sufficient concentration of heat to cause ignition. This influence of the air upon the body is as universal as the former, and the adaptation of the one to the other as constant. With the exception of some countries near the equator, and there only in the hot season and the middle of the day, the temperature of the atmosphere is always below that of man; and as heat always tends towards an equilibrium, it is obvious that a constant subtraction of heat from the body must be going on. Now we are so organised as to allow of this universal subtraction; and indeed, were it suddenly stopped, or even diminished, we should soon perish. Again, if the subtraction became increased, or went on more rapidly than the vital principle could replace it, our temperature would sink, our humours and fluids freeze; and in this case, too, we should soon perish. But there are intermediate points between these two extremes; and as we before said, our organisation is such that it adapts itself to the degree. All organic bodies are capable of resisting to a great extent, and of modifying the action of, heat and cold; indeed, this principle of self-preservation is in them so striking as to have been regarded from a very early period as the most essential attribute of life. The power possessed by the higher classes of animals, of preserving a more or less uniform degree of heat, is almost unlimited. In very cold climates the thermometer not unfrequently sinks to 50° or 55° below the freezing-point; while in very hot ones it is sometimes 120° or 125° above it, making a difference of 170° or 180°; still, however, the temperature of the body remains unchanged. What unanswerable evidence of design is this, and how limitless must be that Power who could create such wonderful adaptations!

If the atmospheric pressure produces in some measure the regulation of heat and cold, in no less degree does it affect moisture and its concomitants—clouds, mist, rain, snow, and hail; and thus we are dependent for many of our comforts, and for most of our necessities, upon the due adjustment of atmospheric influences. Winds, too, arise from any unwonted atmospheric pressure disturbing the equilibrium of the atmosphere, and are the efforts of nature to restore the balance. All the changes of weather, the most violent storms and tempests, are owing to the same cause.

Connected with this subject, as evidencing design, is the composition of the air, which is precisely that best adapted to support respiration. It consists, besides

small proportions of aqueous vapour and carbon, of two fluids or gases called oxygen and nitrogen. In a separate state these gases are inimical to life. Lavoisier proved by experiment that pure air, or oxygen gas, if respired for a certain time, rarefies the blood too much, and increases the rapidity of the circulation, the effects of which are violent fever, inflammation of the lungs, and death. Nitrogen is equally destructive to life, as not yielding that principle on which the purification of the blood depends. It is their combination that renders them salutary to the constitution; neither consuming life by too much stimulus and excitement, nor deadening its energies by a languid circulation and depression of spirits. Why should the air have been composed exactly of twenty-one parts of oxygen and seventy-nine of nitrogen? Why were all other proportions excluded? It could not have been owing to a blind and fortuitous chance. The fact that we find two deadly ingredients so united as to become not only harmless, but salutary, must strike every mind with an unanswerable evidence of design. Atmospheric air is absolutely necessary both to animal and vegetable life, and both classes of beings are fully adapted for its reception. The boldest Epicurean could scarcely imagine that so necessary a substance has by mere chance surrounded this globe for the support of its inhabitants, upon whom, without it, God would have bestowed his power, and wisdom, and goodness in vain; nay, even had men, according to the doctrine of Epicurus, sprung up like mushrooms from the earth without an atmosphere, they could not have existed upon it. Has not, then, the hand of a wise Creator been here visibly employed, or why were we supplied with instruments that render the air available to us?—enabling us to resist its dreadful pressure, and to avail ourselves of its unutterable advantages. If we contemplate for a moment the evils which would have followed had not Divine intelligence presided at the constitution of our globe, and placed an atmosphere around it, how fearful and dreary it would have been! The moon has no atmosphere, and hence its climate must be very extraordinary; either the fiercest sunshine must reign, or the keenest frosts endure. If our earth had been similarly situated, no organic being would have adorned its surface; neither plant nor animal could have existed; no reflection of light could have taken place; no dawn or twilight would have prepared us for morning or for night; a dome blacker than darkness would have surrounded the earth, and light only have become manifest when the eye received it directly from the sun. The blue sky which now surrounds us, and which is owing to the thin watery vapours floating in the atmosphere, and reflecting peculiar rays of light, the blue and the violet, would not have been there. And where can we find such evidences of design as the blue colour which the sky exhibits? Of all hues we could imagine, is there any to surpass that mild and soft ethereal tint, harmonising with all around us, and on which the eye, fatigued with more brilliant and dazzling objects, turns for relief and repose? The unbeliever may say that this colour was the result of chance; but suppose any other, a bright yellow, a dazzling white, a glaring red, a fearful colour, how uncomfortable and painful would it have been for the vision of man! Again, an atmosphere is necessary to hearing; it enlarges the field of vision, and contributes also to the means of smell; and not only do the beings on earth enjoy life through its means, but it contributes to the sustenance of the finny tribes, enabling them not only to exist, but to rest in the water, or ascend and descend in it in quest of food.

There are still other relations existing between man and external nature, to which we would shortly allude, as illustrative of design; and they are such, that without them certain important functions could not be performed, and consequently man could not exist. These relations, which may be termed *organic*, are the more numerous and necessary to life, as the organisation of the individual is the more developed or complete; and while they may be all included in the two functions of nutrition and sensation, they are the more multiplied as the operations of the former are more complex, and the extension of the latter greater; and hence they are more numerous in man than in any other animal. As in the physical relations, to some of which we have already alluded, so in the organic we must assign the first rank to the atmosphere, so necessary to life, and so admirably adapted to sustain it. It is the medium, also, through which we receive heat, light, and electricity, of which we appear to be as much in need as of that principle of air which purifies our blood, and fits it for the performance of its several operations. These matters are inherent in all living bodies; and if simple elementary bodies do exist, these are they. Many physiologists recognise the greatest analogy between the nervous fluid and electricity, and there is great reason for believing that it assists considerably in the maintenance of the vital phenomena. We know, however, that all these agents exercise a great influence upon life, from the demand that living bodies make upon them. Observe how plants languish and become weak when deprived of light, and how solicitously they move in the direction that will the most expose them to its invigorating influence. Nor is it less necessary to animal existence. But let us suppose that this element was only given for the purpose of enlightening the earth, what a wonderful relation, then, does it bear to the eye which perceives it! No one who considers the eye attentively can resist the impression of the evidence of design and skill which its construction exhibits. At the same time, it must be obvious that this construction of the eye would not answer its purposes unless the constitution of light corresponded to it. Light is an element of the most peculiar kind and properties, and such an element can hardly be conceived to have been placed in the universe without some regard to its operations and functions. As the eye is made for light, so light must have been made, at least among other ends, for the eye. What we have said of light is equally applicable to heat. It is obvious that the vital energy of plants is much diminished, even suspended, during winter, while with the return of summer they again shoot forth their leaves and flowers; the same alternation obtains also among hybernating animals. Heat is evidently the cause of these changes; so much so, indeed, that vegetables may be forced by artificial modes to invert the order of the seasons. The climates in fact demonstrate the influence of heat.

Electricity undoubtedly exists in the atmosphere in all its states; but we know very imperfectly the laws of this subtle agent, and are still more ignorant of its atmospheric operation. The present state of science, while it permits us to hazard an opinion, does not enable us to perceive those adaptations of its laws to its uses, which we can discover in those cases where the laws and the uses are both of them more apparent. 'It is at anyrate very probable,' says Professor Whewell, 'that electricity has its important purposes in the economy of the atmosphere. And this being so, we may see a use in the thunderstorm and the stroke of the lightning. These violent events are, with regard to the electricity of the atmosphere, what winds are with regard to heat and moisture. They restore the equilibrium where it has been disturbed, and carry the fluid from places where it is superfluous, to others where it is deficient. We are so constituted, however, that these crises impress every one with a feeling of awe. The deep lowering of the gloom of the thundercloud, the overwhelming burst of the explosion, the flash from which the steadiest eye shrinks, and the irresistible arrow of the lightning, which no earthly substance can withstand, speak of something fearful, even independently of the personal danger which they may whisper. They convey, far more than any other appearance does, the idea of a superior and mighty Power, manifesting displeasure, and threatening punishment. Yet we find that this is not the language which they speak to the physical inquirer; he sees these formidable symptoms only as the means or the consequences

of good. What office the thunderbolt and the whirlwind may have in the *moral* world, we cannot here discuss; but certainly *he* must speculate as far beyond the limits of philosophy as of piety, who pretends to have learned that these work more of evil than of good. In the *natural* world, these apparently destructive agents are, like all other movements and appearances of the atmosphere, parts of a great scheme, of which every discoverable purpose is marked with beneficence as well as with wisdom.

DESIGN IN THE STRUCTURE OF THE EARTH.

It is evident, even on a very casual inspection, that the surface or crust of the globe we inhabit has undergone many changes, and these both great in extent and of long duration. Two agents, fire and water, have been mainly instrumental in their production. The ocean, the great source of aqueous influence, seems, from time immemorial, to have been engaged in a struggle to degrade or level the surface of the earth, not only by the direct action of its tides and currents upon coasts, but also by means of the clouds of vapour which it sends up into the atmosphere, and which redescend on the earth in the shape of rain and snow, giving rise to numberless springs and rivers, all of which have some effect, less or more, in washing down the dry land. This system of detrition, carried on from age to age, would have produced a state of things very different from that which now exists, had it not been for the antagonising agency of fire, which, working from the centre outwards, either by extensive convulsions or by slow upheavements, has elevated and repaired the earth's surface as fast as the waters have abraded it, and has compelled the ocean to give back to the light, in the form of continents and islands, the materials which it had before swallowed up.

In this reciprocal action and counteraction, and in their effects upon the earth's surface, we find abundant proofs of benevolent design. By these means have been produced those extensive irregularities—that diversity of hill and vale, ridge and plain—on which depends the fitness of the earth for the maintenance of all organic life, whether animal or vegetable. If the surface were level and smooth, the vapours raised from the sea by the sun would find no channel for their return, and the globe would necessarily become a stagnant marsh, unsuited for the residence of man, and the greater part of the creatures that now tenant it along with him. But even if man could have inhabited the earth without its existing irregularities, how few comparatively would have been the advantages of his position! Had the matters carried down and deposited in the early seas, in the form of chalk-beds, limestone-beds, and coal-beds, with all the treasures of minerals and metals accompanying them, remained where they were first accumulated, man would have lost all the most essential elements of industry and civilisation. The changes and disruptions which have taken place in the crust, have brought to light a fund of riches, without which he would have been poor in comforts and in arts. Looking to those vast coal-fields alone which the crust of our globe contains, can we imagine for a moment that the great changes by which these ruined forests of the primeval world were first spread out and moulded into new forms, and then upheaved to the reach of man, to supply him with endless stores of heat, light, and wealth, were produced by blind chance, or by aught but a creative Designer, a being equally great and good?

On examining further into the condition of the earth's crust, as established by the changes it has undergone, we find numerous other proofs of the wise foresight which has ordered and arranged the whole. We discover that all the successive mutations of our planet, extensive as they have evidently been, were rendered compatible with the existence and enjoyment of countless numbers of organised and sentient beings. All the rocky strata of the crust, with the exception of those which appear to be the oldest and deepest-seated, are mixed up abundantly with organic remains, both animal and vegetable. In short, whatever was the state of the surface at any given period of the revolutions progressively fitting it for the ultimate residence of man, we find organised beings to have sprung up upon it, with such habits and peculiarities of structure as enabled them to exist and enjoy existence under the peculiar circumstances in which they were placed.

DESIGN IN ANIMAL PHYSIOLOGY.

The earth, whose structure we have just briefly noticed, serves as the place of habitation for two kinds of existences—the animal and vegetable—in whose formation and functions we discover the beautiful dispensations of Providence, extending on every side over a vast range of beings, and demonstrating the unity of plan on which organised creation has been devised. And first, the whole circle of our knowledge does not afford greater evidence of design than comparative anatomy: in it we find innumerable contrivances for the comfort and happiness of the different tribes of beings adapted to the peculiarities of their condition; in each animal we see the same organ repeated, but modified to render it more available to the habits of its possessor; and among all the wonders of creation, there are none which strike the inquiring mind more forcibly than this change or modification of formation for the obvious purpose of accommodation to circumstances. Were all animals formed alike, or did the differences which exist between them bear no relation to their habits or destinies, it would be less easy to refute the doctrine which assigns all things to material causes, and excludes the designing hand of an intelligent Creator. Although even then the argument would be totally untenable, still, the demonstration which disproves it would have been less satisfactory and perfect, as the surprising skill and beneficent care by which the structure of every animal is adapted to its individual habits and necessities could not have been so well displayed. A single tool in the hands of the carpenter is a proof of contrivance; but that proof is much multiplied, and rendered more forcible, when we find the same instrument modified into a thousand forms to suit the different operations of the workman. Few of the functions of animated beings better illustrate this than that of alimentation, which we shall now endeavour briefly to trace, through the humble zoophytes and worms up to birds and mammiferous animals.

Structure of Zoophytes, &c.

Nutrition is common to all animals without exception; and the numerous and varied modifications of the means employed to effect it, are obvious proofs of the design and intelligence of the Creator. There are some animals so nearly allied to plants as to be scarcely distinguishable from them; and in these, as in plants, nutritive matter is introduced by mere imbibition. Fixed like plants to the spot where they grow, any other organs would have been superfluous; while to those which are not so attached, but seek their food and obtain it through their locomotive powers, organs for seizing and preparing it are necessary. In them, therefore, we find lips variously and curiously modified; glands about the mouth for furnishing fluids for lubricating dry alimentary matters; a tongue, or something analogous to it; teeth and jaws for breaking down hard substances, and rendering them fit for swallowing; with a passage called the œsophagus, or gullet, leading from the mouth to the stomach, in which the food is at last assimilated, and rendered fit for nourishing the animal. But it is not until we advance some way in the great chain of animal life that these parts become sufficiently obvious, or their offices clearly defined. In the very lowest orders, the mouth and stomach are one continuous tube, or all stomach, as it may be called, and so simple in construction, that the animal may be turned inside out without detriment to it; that which was external being now internal, and performing, apparently with equal facility, all the offices of what was previously the stomach. As we advance, however, we

find the nutritive organs ceasing to be a mere sucking apparatus, or a receptacle for imbibed fluids. In those whelks which are furnished with proboscides, we find a cavity occupied by the aperture of the œsophagus, a tongue, and teeth; while the snail possesses a perfectly-formed mouth and lips. Among the worms, whose stomachs are generally membranous bags, we find examples of wonderful contrivance and design. Thus the powerful stomach of one species contains three hard calcareous shells, by which the individual is enabled to bruise and masticate the shelled animals on which it feeds. The discoveries of Ehrenberg respecting the animalculæ inhabiting different vegetable infusions, have extended in an extraordinary degree our knowledge of the stupendous power of God; and the inimitable proofs of design displayed in beings to whom, in relative size, the mite is as an elephant, afford astonishing displays of a minute and most beneficent attention to the preservation of these curious creatures, in whose organisation and instincts new and admirable indications of creative wisdom are revealed. By the aid of the microscope, we are enabled to perceive the Creator of the universe minutely busy among the worlds of living creatures to which he has given birth on a blade of grass, or in a drop of water, and to discover fresh scenes of wonder, and interest, and evident design among hosts of animated beings, infinite in number as they are in minuteness.

As we ascend higher in the scale of existence, we find the digestive apparatus ceasing to be simple cavities, or canals hollowed out of the substance of the body, and becoming distinct organs formed by membranes and coats proper to each; and among these, the first example occurs in the sea-anemone, in which we find spaces intervening between the coats of the stomach and the skin of the animal: here, however, the stomach is still a blind pouch, one aperture serving alike for receiving and ejecting the alimentary matters. In the *echini*, or sea-urchins, these organs are still more perfect. Those of mastication are peculiarly developed; an œsophagus, or gullet, also presents itself, and a stomach continued into a regular intestine, which takes two turns in the body before it terminates.

Structure of Insects.

In the digestive organs of insects we meet with a multitude of new and peculiar formations, while most of the simple forms found in the lower animals are here repeated. The organs of mastication, deglutition, and suction, present such remarkable differences, that the arrangements of modern systems of entomology have been chiefly founded on them. In this order of animals, nutrition by vegetable substances is much more common than in those below it; indeed, as Blumenbach has observed, the business of nutrition in insects does not seem to have for its object the mere preservation of the individual, as in most red-blooded animals, but chiefly the consumption of organised matter, which will appear from considering the structure of their alimentary canal. In most of those which are subject to a metamorphosis, the stomach in the larva state is of a great size in comparison with the short intestinal canal; while those, on the contrary, which take little or no nourishment in their perfect state, have this organ remarkably diminished, and, as it were, contracted. How beautifully does the great size and straight course of the intestinal apparatus of the animal, when in its caterpillar state, coincide with its enormous voracity and quick digestion! It has been computed that caterpillars sometimes devour and digest no less than three times their own weight of aliment in four-and-twenty hours. On the other hand, during the subsequent metamorphosis which the animal undergoes, no food is taken; but nature, or rather the God of nature, has wonderfully, and with beneficent design, provided against any necessity for this, by causing insects to become very fat, as observed by Malpighi, on the approach of these changes; so that this fat, being absorbed into the blood while these are going on, serves all the purposes of a supply of alimentary matters from without. The insects now under consideration exhibit at different periods of their existence the greatest contrasts, not only in external form, but also in their habits, instincts, and modes of subsistence. The larva, as we have seen, is remarkable for its voracity, requiring large supplies of food, and consuming enormous quantities of vegetable matter; the perfect insect or butterfly, having attained its full dimensions, is sufficiently supported by small quantities of a more nutritious food, consisting either of animal juices or of the fluids prepared by flowers, which are generally of a saccharine quality, and contain nourishment in a highly-concentrated form. It is evident that the same apparatus which is necessary for the digestion of the bulky food taken in during the former period, would not be suited for the assimilation of that which is received during the latter; and that in order to accommodate it to this altered condition of its function, considerable changes must be made in its structure. Who can believe that these changes are made without wisdom, or persuade themselves that all this is to be brought about by causes divested of knowledge and understanding! Dr Roget, in his admirable Bridgewater Treatise, has beautifully illustrated the subject, by very clear and correct drawings by Mr Newport, of the three different states of the entire alimentary canal of the privet hawkmoth (*Sphinx ligustri*): first when a caterpillar; then as a chrysalis; and lastly as the moth: and of these, taking our text from Roget, or rather from Herold, we shall endeavour to give some account. We have seen that in the caterpillar the stomach forms by far the most considerable portion of the alimentary canal, bearing some resemblance in its structure and capacity to the stomachs of certain worms. This is followed by a large, but short and perfectly straight intestine. In the chrysalis, these organs have undergone considerable modifications; the whole canal, but more especially the stomach, being contracted both in length and width: the shortening of the intestine not being proportionate to that of the whole body, obliges it to be folded upon itself for a certain length. In the moth, the contraction of the stomach has proceeded much farther, and an additional cavity, which may be considered as a kind of craw, is developed; the small intestine takes a great many turns during its course, and a large pouch has been formed at the part where it joins the large intestine. 'When we consider,' say Kirby and Spence, speaking of the phenomena which we have detailed, 'the adaptation of all these changes of form, the loss of old organs and the acquisition of new ones, to the functions and mode of life of the animal, we see evidently the all-powerful hand of that Almighty Being who erected the universe, upholding by his providence, and the law that he has given to every creature, the system that he at first brought into existence.'

In insects, all parts concerned in digestion are in general smaller and less complicated in the carnivorous than in the herbivorous tribes, apparently from the matters on which the former subsist being already animalised, and requiring therefore less preparation before they are received into the blood; and it is no slight indication of design to observe in them how admirably parts are adapted to the animal necessities. Thus scorpions, spiders, millepedes, and others which live for the most part on hard animal substances, are furnished with jaws of a firm horny texture, in many cases very large, when compared with the size of the animal; dragon-flies and beetles, particularly the stag-beetle, are examples in which the jaws are very large and manifest, often possessing tooth-like edges; and these, too, feed on smaller insects than themselves. In another description, of which the bee, wasp, and ant are examples, we find the animal deserting the coarser kinds of food, living chiefly on juices; and in them also we again find the same mode of taking in nourishment as in the lowest stages of the animal kingdom—namely, by means of organs of suction, which here, however, are combined with organs for mastication. These organs

of motion are still more developed in insects, such as gnats, house-flies, &c.; in them they consist of a tube, of which the sides are strong and fleshy, and movable in every direction, like the trunk of an elephant, and having at its extremity a double fold, resembling lips, which are well adapted for suction. The gnat, and other insects which pierce the skin of animals, have for this purpose instruments termed *lancets*, from their shape and office. In the gnat they are five or six in number, finer than a hair, exceedingly sharp, and generally barbed on one side; while in the house-fly they are flat, like the blade of a knife. In the butterflies, however, which are almost wholly independent of solid nutritive matter, these organs present themselves in the greatest perfection, and without any addition of teeth. The proboscis of this order of insects is a double tube, constructed by the two edges being rolled longitudinally till they meet in the middle of the lower surface, thus forming a tube on each side, but leaving also another tube, intermediate to the two lateral ones. This middle tube is formed by the junction of two grooves, which, by the aid of a curious apparatus of hooks, lock into each other, and can be either united into an air-tight canal, or be instantly separated at the pleasure of the animal. It would be quite incompatible with the nature of this essay to enter at greater length into the evidences of design deducible from the digestive apparatus of insects: no one can be blind enough to deny that it evinces an origin of things quite incompatible with mere brute and uncertain chance.

Structure of Fishes and Reptiles.

Still ascending in the scale of creation, we come to the contemplation of fishes. We ask, was it by mere chance that the respiratory apparatus of fishes was so formed that their blood receives its vivifying principle from the air which is held in solution by the water in which they move? And who cannot, in this one instance, but discern the hand of a ruling Providence, adapting the structure of animals to the habits which are to characterise them? Was it by chance that in the plaice, the sole, the turbot, and other flat fishes, the eyes are placed both on one side of the body, an isolated instance of a want of uniformity in the two sides? No: the design is obvious; for as these animals are destined to continue always with one side in the mud at the bottom of the water, an eye on this side would have been superfluous and inconvenient to them. The same design and evident adaptation of structure to circumstances is apparent in the Surinam sprat. This singular animal generally swims so near the surface, that its eye is partly in and partly out of the water; and all its parts correspond with this strange peculiarity, the pupil being partially divided into an upper and a lower portion, and the lens consisting of two globes, an upper and a lower one attached together. It appears that the superior part of the eye is, like that of terrestrial animals, adapted to refract rays transmitted by air, and the inferior part, like that of aquatic animals, those transmitted by water, and that the refracting power of the several parts of the eye is accordingly much less above than below. With regard to the function of hearing, we find in fishes the Creator still proceeding on one vast plan or unity of design; with the exception of one species, all the parts of the ear are buried within the skull, and send no process to the surface; and this is precisely what we should have looked for in beings destined to hear through the medium of water, the vibrations of which being so much more powerful than those of air, would render the complicated apparatus requisite in terrestrial animals in them superfluous. In the class of fishes, we see the lowest condition of the alimentary canal as it is found in vertebral animals. Fishes, voracious to a proverb, subsist almost entirely on animal food. The ocean teems chiefly with animal life. It is a dense, and rich, and moving, and tempestuous element, where vegetation is comparatively small, contrasted with its development in the light and unresisting element of the atmosphere. This rich and resisting element of water abounds in every latitude and in every drop, with all forms of animated beings. Thus fishes have the means of easily satisfying their voracious appetites with a selection of all kinds of food. Their teeth, more instruments of prehension than mastication, are sharp, recurved, dense, and pointed cones, adapted to grasp and retain every living thing that moves in the waters, and placed in all parts of the mouth of these all-devouring animals; their œsophagus, or gullet, is very wide and short, and directly opening into their capacious stomach. Thus the food of fishes not being masticated in the mouth, does not dwell there; and as they are surrounded with an abundance of moisture, they require no salivary glands for lubricating the food, and they have none. Like larvæ, their stomachs are very large; and like them also they are chiefly intent upon the gratification of their appetites. The intestine of fishes varies considerably in length, according to the kind of food; but, generally speaking, it is not longer than their bodies; whereas in most reptiles—which compose the next class of animals in the ascending scale—it is considerably longer; a provision unnecessary in fishes, perhaps from the matters on which they for the most part feed being almost always of the same nature as their own bodies, and therefore requiring comparatively little preparation.

Relinquishing our plan of illustrating design by an account of the digestive apparatus, let us consider, in reptiles, the organs subservient to the function of respiration, which, though somewhat similar to the organs designed for that purpose in birds and mammiferous quadrupeds, differ from those in some remarkable particulars. In reptiles, indeed, as in birds and mammalia, there is a kind of lungs; but they are membranous, and not fleshy—that is to say, the cells which they contain are so much larger as to give them a membranous, and not a fleshy appearance—nay, in many reptiles the lungs consist of one membranous bag, very similar to the air-bladder of fishes. These lungs or bags are situated in the abdomen, and are loose and floating among the entrails; and they receive their supply of air, in general, not as in birds and mammiferous animals, in consequence of the formation of a vacuum around them, but by a process very similar to that of swallowing. Hence reptiles, unlike the higher classes of animals, can still continue to breathe if their bodies are cut open, because they do not require a vacuum round the lungs. The air thus received is subservient to the purification of the blood in the usual manner; but it is not so immediately vitiated as air received into fleshy lungs, owing to the larger size of the cells, which do not immediately allow the whole of it to come into contact with their sides. This is one reason why reptiles can sustain an impediment to their respiration for a much longer time than birds and mammals; but another and a much better reason is to be found in the distribution of their blood-vessels; those going to the lungs not forming a necessary part of the general circulating system, but constituting, as it were, only an appendage to it, which may for a time cease to transmit blood without inconvenience.

Structure of Birds.

We come now to birds; and whether we consider their external form or anatomical structure, or in whatever light it is possible to view them, the same conclusion presents itself to the mind. Inexhaustible contrivance, vast and comprehensive intelligence, are everywhere conspicuous. Behold in their pointed bill, and gradually enlarging head and neck, a means of penetrating the yielding air; then the prow-like breast, the flexible rudder tail, the equipoised wings, and feathers at once adapted for lightness, for strength, and for tenacity, and all bearing relations, not only to each other, but to the air in which the animal is to fly: the wise contrivance of these could not be the result of chance. The investing membranes of their lungs, prolonged from various parts of their surface in the form of tubes, and expanding into bags, enveloping almost

all the entrails, so as to keep them constantly surrounded with air, and similar prolongations extending also into the cavity of their bones, serving to inflate these in the same manner—are not these peculiarities for the obvious purpose of giving lightness to the animal, and thus enabling it to support itself in the air?—and does not this palpable subserviency of one part of the structure of birds to the rest, irresistibly inculcate the truth that one master-hand has regulated the whole?

In the beaks or bills of birds, various as are their forms, we can trace an exact adaptation to the food of the species. In those that tear their prey, as the eagle and hawk—or bruise hard fruits, as the parrot—or penetrate the bark of trees, as the woodpecker—the bills are of extraordinary hardness, and, in form, intimately connected with the habits of the animal. In those to whom a sense of feeling in this part is necessary to enable them to find their food in mud or water, as the duck, it is very soft, generally flattened, and so constructed that fluids may filter through it, while the solid food is retained. A bill hooked at the end, with sharp edges, characterises birds of prey. Another species of strong sharp-edged bill, of an elongated shape, but without a hook, serves to cut and break, but not to tear; and this is the form of the bill in birds which live upon animals which make resistance in the water; some of these are straight, as in the heron—others curved, some downwards, some upwards. Some sharp-edged bills have their sides approximating, like the blade of a knife to its handle, and thus adapted to seize small substances; as the penguin. The small, conical, arched bill of poultry serves only to take up grain. The bills of the smaller birds present all the varieties of the conical form, from the broad-based cone of the hawfinch to the thread-like cone of the humming-bird. Such of them as have strong short bills live on grain; those with long thin ones, on insects. Where the bill is short, flat, opening very anteriorly, as in martens and swallows, the bird seizes flies and butterflies in the air; and if it be long and curved, possessing some strength, we find it grubs up worms for its food. The same evidence of design which we discover in the bills of birds adapting them to procure the kind of food on which the individual is to subsist, is apparent also in the conformation of their digestive organs. As the food of birds varies from the softest animal matter to the hardest grain, so we observe every gradation in the structure of their stomachs, from the membranous sac of the carnivorous tribes to the true muscular gizzard of granivorous birds—varying according as the food consists of animal or vegetable materials, or presents more or less resistance from the cohesion of its texture.

In no branch of natural history do we find more remarkable evidences of design than in the varieties of kinds of covering of animals adapted to their wants and situations on the globe. The covering of birds, in particular, 'cannot,' says Paley, 'escape the most vulgar observation. Its lightness, its smoothness, its warmth—the disposition of the feathers all inclined backward, the down about their stem, the overlapping of their tips, their different configuration in different parts, not to mention the variety of their colours, constitute a vestment for the body so beautiful, and so appropriate to the life which the animal is to lead, as that, I think, we should have had no conception of anything equally perfect if we had never seen it, or can now imagine anything more so. Let us suppose (what is possible only in supposition) a person who had never seen a bird to be presented with a plucked pheasant, and bid to set his wits to work how to contrive for it a covering which shall unite the qualities of warmth, levity, and least resistance to the air, and the highest degree of each: giving it also as much of beauty and ornament as he could afford. He is the person to behold the work of the Deity, in this part of His creation, with the sentiments which are due to it.

The commendation which the general aspect of the feathered world seldom fails of exciting, will be increased by further examination. It is one of those cases in which the philosopher has more to admire than the common observer. Every *feather* is a mechanical wonder. If we look at the quill, we find properties not easily brought together—strength and lightness. I know few things more remarkable than the strength and lightness of the very pen with which I am writing. If we cast our eye to the upper part of the stem, we see a material, made for the purpose, used in no other class of animals, and in no other part of birds; tough, light, pliant, and elastic. The pith, also, which feeds the feathers is, amongst animal substances, *sui generis*; neither bone, flesh, membrane, nor tendon.

But the artificial part of a feather is the beard, or, as it is sometimes, I believe, called, the vane. By the beards are meant what are fastened on each side of the stem, and what constitute the breadth of the feather; what we usually strip off from one side or both when we make a pen. The separate pieces, or laminæ, of which the beard is composed are called threads, sometimes filaments or rays. Now the first thing which an attentive observer will remark is, how much stronger the beard of the feather shews itself to be, when pressed in a direction perpendicular to its plane, than when rubbed, either up or down, in the line of the stem; and he will soon discover the structure which occasions this difference—namely, that the laminæ whereof these beards are composed are flat, and placed with their flat sides towards each other; by which means, whilst they *easily* bend for the approaching of each other, as any one may perceive by drawing his finger ever so lightly upwards, they are harder to bend out of their plane, which is the direction in which they have to encounter the impulse and pressure of the air, and in which their strength is wanted, and put to the trial.

This is one particularity in the structure of a feather: a second is still more extraordinary. Whoever examines a feather, cannot help taking notice that the threads, or laminæ, of which we have been speaking, in their natural state *unite;* that their union is something more than the mere apposition of loose surfaces; that they are not parted asunder without some degree of force; that nevertheless there is no glutinous cohesion between them; that therefore, by some mechanical means or other, they catch or clasp among themselves, thereby giving to the beard, or vane, its closeness and compactness of texture. Nor is this all: when two laminæ which have been separated by accident or force are brought together again, they immediately *reclasp:* the connection, whatever it was, is perfectly recovered, and the beard of the feather becomes as smooth and firm as if nothing had happened to it. Draw your finger down the feather, which is against the grain, and you break, probably, the junction of some of the contiguous threads; draw your finger up the feather, and you restore all things to their former state. This is no common contrivance: and now for the mechanism by which it is effected. The threads or laminæ abovementioned are *interlaced* with one another, and the interlacing is performed by means of a vast number of fibres, or teeth, which the laminæ shoot forth on *each side*, and which hook and grapple together. A friend of mine counted fifty of these fibres in one-twentieth of an inch. These fibres are crooked, but curved after a different manner; for those which proceed from the thread on the side towards the extremity of the feather are longer, more flexible, and bent downwards; whereas those which proceed from the side towards the beginning or quill end of the feather, are shorter, firmer, and turn upwards. The process, then, which takes place is as follows:—When two laminæ are pressed together, so that these long fibres are forced far enough over the short ones, *their* crooked parts fall into the cavity made by the crooked parts of the others, just as the latch that is fastened to a door enters into the cavity of the catch fixed to the door-post, and there hooking itself, *fastens* the door; for it is properly in this manner that one thread of a feather is fastened to the other.

This admirable structure of the feather, which, it is easy to see with the microscope, succeeds perfectly for

the use to which nature has designed it; which use was, not only that the laminæ might be united, but that, when one thread or lamina has been separated from another by some external violence, it might be reclasped with sufficient facility and expedition.

In the *ostrich*, this apparatus of crotchets and fibres, of hooks and teeth, is wanting; and we see the consequence of the want. The filaments hang loose and separate from one another, forming only a kind of down; which constitution of the feathers, however it may fit them for the flowing honours of a lady's head-dress, may be reckoned an imperfection in the bird, inasmuch as wings composed of these feathers, although they may greatly assist it in running, do not serve for flight.

But under the present division of our subject, our business with feathers is, as they are the *covering* of the bird. And herein a singular circumstance occurs. In the small order of birds which winter with us, from a snipe downwards, let the external colour of the feathers be what it will, their Creator has universally given them a bed of *black* down next their bodies. Black, we know, is the warmest colour: and the purpose here is, to *keep in* the heat arising from the heart and circulation of the blood. It is further likewise remarkable, that this is not found in larger birds; for which there is also a reason:—Small birds are much more exposed to the cold than large ones; forasmuch as they present, in proportion to their bulk, a much larger surface to the air. If a turkey were divided into a number of wrens (supposing the shape of the turkey and the wren to be similar), the surface of all the wrens would exceed the surface of the turkey, in the proportion of the length and breadth (or of any homologous line) of a turkey to that of a wren; which would be perhaps a proportion of ten to one. It was necessary, therefore, that small birds should be more warmly clad than large ones; and this seems to be the expedient by which that exigency is provided for.

The *oil* with which birds prune their feathers, and the organ which supplies it, is a specific provision for the winged creation. On each side of the rump of birds is observed a small nipple, yielding upon pressure a butter-like substance, which the bird extracts by pinching the pap with its bill. With this oil or ointment thus procured, the bird dresses its coat, and repeats the action as often as its own sensations teach it that it is in any part wanted, or as the excretion may be sufficient for the expense. The gland, the pap, the nature and quality of the excreted substance, the manner of obtaining it from its lodgment in the body, the application of it when obtained, form, collectively, an evidence of intention which it is not easy to withstand. Nothing similar to it is found in unfeathered animals. What blind *conatus* of nature should produce it in birds? should not produce it in beasts?'

As we have entered so fully into this subject when treating of other classes of beings, we shall not here revert to it, or bring forward illustrations of the truth of our proposition; the facts already detailed seem sufficient to display the wisdom which the great Creator has evinced in this department of the animal world. Nothing can be more worthy of remark than the exhaustless contrivances by which every difficulty is obviated, and nature moulded to the will of its Almighty Author. How many obstacles were to be overcome before a heavy body like that of an eagle or the mighty condor could be rendered buoyant in the air, and made to track its adventurous course so high above the earth as to be almost lost to human gaze! How many conditions were necessary to give safety and enjoyment to the smallest of the winged tribes, even after the first obstacles were overcome! And yet how wonderfully simple and efficacious the mechanism by which the whole has been accomplished!

Structure of the Mammalia.

We now arrive at the consideration of the mammalia, or those animals which suckle their young; and at the head of this great class we find man proudly pre-eminent. We have already seen that as the materials on which the function of digestion is to be performed are numerous and diversified, so a difference exists in the parts which are subservient to it. Without altering the general plan of the function, or the essential parts of the organs concerned in it, nature makes such additional provisions, in the instincts by which the reception of food is guided, and in the organs by which it is assimilated, as are suited to the circumstances in which the animal is placed, to the food on which it is to subsist, and to the ulterior purposes which it is to serve in the world. Such evidences of design are very remarkable in the mammalia; and in few organs are they more powerfully instanced than in the teeth, between which in form, structure, and position, and the kind of food on which each animal of this class is intended to subsist, the most intimate connections present themselves. These relations—which, indeed, may be also traced in the shape of the jaw, in the mode of its articulation with the head, in the proportional size and distribution of the muscles which move the jaw, in the form of the head itself, in the length of the neck and its position on the trunk, and, in fact, in the whole conformation of the skeleton—have been noticed from very early ages, and frequently described.

The purposes answered by the teeth are principally those of seizing and detaining whatever is introduced into the mouth, of cutting it asunder, and dividing it into smaller pieces, of loosening its fibrous structure, and of breaking down and grinding its harder portions. Four principal forms have been given to teeth, which accordingly may be distinguished into the conical, the sharp-edged, the flat, and the tuberculated teeth; though we occasionally find a few intermediate modifications of these forms. It is easy to infer the particular functions of each class of teeth, from the obvious mechanical actions to which, by their form, they are especially adapted. The conical teeth, which are generally also sharp-pointed, are principally employed in seizing, piercing, and holding objects; such are the offices they perform in the crocodile and similar reptiles, where all the teeth are of this structure; and such also are their uses in most of the cetacea or whale tribe, where similar forms and arrangements of teeth are found to prevail. The animals subsist on fish, and their teeth are therefore constructed very much on the model of those of fish; while those cetacea, on the other hand, which are herbivorous, as the manatus and dugong, have teeth very differently formed.

The sharp-edged teeth perform the office of cutting and dividing the yielding textures presented to them: they act individually as wedges or chisels; but when co-operating with similar teeth on the opposite jaw, they have the power of cutting like shears or scissors. The flat teeth, of which the surfaces are generally rough, are used, in conjunction with those meeting them in the opposite jaw, for grinding down the food by a lateral motion, in a manner analogous to the operation of millstones in a mill. The tuberculated teeth, of which the surfaces present a number of rounded eminences, corresponding to depressions in the teeth opposed to them in the other jaw, act more by their direct pressure in breaking down hard substances, and pounding them as they would be in a mortar.

The apparatus for giving motion to the jaws is likewise varied according to the particular movements required to act upon the food in the different tribes. The articulation of the lower jaw to the skull is somewhat similar to a hinge; but considerable latitude is given to its motions by the interposition of a movable cartilage between the two surfaces of articulation, a contrivance admirably answering the intended purpose. Hence, in addition to the principal movements of opening and shutting, which are made in a vertical direction, the lower jaw has also some degree of mobility in a horizontal or lateral direction, and is likewise capable of being moved backwards or forwards to a certain extent. In the conformation of the teeth and jaws, a remarkable contrast is presented between carnivorous and herbi-

verous animals. In the former, of which the tiger may be taken as an example, the whole apparatus for mastication is calculated for the destruction of life, and for tearing and dividing the fleshy fibres. The teeth are armed with pointed eminences, which correspond in the opposite jaws, so as exactly to look into one another, like wheelwork, when the mouth is closed, and the muscles which close it are of enormous size and strength. In the herbivorous animals, on the contrary, as in the antelope, the greatest force is bestowed, not so much on the motions of opening and shutting, as on those which are necessary for grinding, and which act in a lateral direction. The surfaces of the teeth are flattened, and of great extent; and they are at the same time kept rough, like those of millstones, their office being in fact very similar to that performed by these implements of grinding. The *Rodentia*, or gnawing quadrupeds, are formed for subsisting on dry and tough materials, such as the bark and roots, and even the woody fibres of trees, and the harder animal textures; and their teeth are expressly adapted for gnawing, nibbling, and wearing away, by continued attrition, the harder texture of organised bodies. They are all furnished with two front teeth, generally very long, and having the exact shape of a chisel; while the molar or back teeth have surfaces irregularly marked with raised zig-zag lines, rendering them very perfect instruments of trituration. The beaver and common rat are examples among omnivorous rodentia, and the hare and rabbit among those that are principally herbivorous.

The *Quadrumana*, or monkey tribes, approach nearer to the human structure in the conformation of their teeth, which are adapted to a mixed kind of food; while the other orders of mammalia exhibit gradations in the structure of their teeth corresponding to the varieties in the nature of their food. 'On comparing the structure of the digestive organs of man,' continues Dr Roget, 'with those of other animals belonging to the class mammalia, we find them holding a place in the series intermediate between those of the purely carnivorous and exclusively herbivorous tribes, and in some measure uniting the characters of both. The powers of the human stomach do not indeed extend to the digestion of either the tough woody fibres of vegetables on the one hand, or the compact texture of bones on the other; but still they are competent to extract nourishment from a wider range of alimentary substances than the digestive organs of almost any other animal. This adaptation to a greater variety of food may also be inferred from the form and disposition of the teeth, which combine those of different kinds more completely than in most mammalia. In addition to these peculiarities, we may also here observe, that the sense of taste in the human species appears to be affected by a greater variety of objects than in the other races of animals. All these are concurring indications that nature, in thus rendering man omnivorous, intended to qualify him for maintaining life wherever he could procure the materials of subsistence, whatever might be their nature, whether animal or vegetable, or a mixture of both, and in whatever soil or climate they may be produced; and for endowing him with the power of spreading his race, and extending his dominion over every accessible region of the globe. Thus, then, from the consideration of the peculiar structure of the organs of his frame, may be derived proofs of their being constructed with reference to faculties of a higher and more extensive range than those of any, even the most favoured, species of the brute creation.'

There is one circumstance connected with the function of digestion, as displayed in certain of the mammalia, to which, as evidencing great and wonderful design and accommodation in structure to circumstance, we would particularly allude: it is the facility and power of the camel of abstaining long from drinking—a power which he is often necessitated to bring into effect during the long period of nine, ten, or even twelve days. It is by the singular structure of the camel's stomach that it is enabled to pass such a time without drinking, and to take in at once a prodigious quantity of water, which remains in reservoirs pure and limpid, because these walls are so contrived that neither the fluids of the body nor of digestion can mix with it. What design is here!—and how redolent of wisdom, and how full of mercy! But let us endeavour to explain the nature of this structure which so evidently adapts the camel to be the inhabitant of the sterile and arid regions of the East:—Ruminating quadrupeds, or those which chew the cud, have two, three, or four stomachs, distinguished, when there are four, by the names of *paunch*, *bonnet*, *many-plies*, and *caille*. When the food is swallowed for the first time, it passes directly from the gullet into the paunch, where it undergoes some necessary changes, and it is then transmitted to the bonnet, to be mixed with the fluids of the cavity. This process is going on during the time the animal is grazing, when, from the incessant occupation of nipping off the grass, for which its teeth are so admirably suited, it has not leisure to chew it sufficiently. When afterwards reposing itself, however, the half-chewed aliment is brought again in successive little balls, from the bonnet into the mouth, where it is subjected to a perfect mastication; and when again swallowed, it passes directly to the many-plies, thence, after some time, to the caille, and ultimately to the intestines. In the camel, however, the paunch has two deep cellular appendages; and the bonnet, or second stomach, has its internal membrane hollowed into numerous deep cells, serving as reservoirs of water, to be used only as occasion requires; while the third stomach is alone appropriated to the immediate necessities of the body. Between the end of the gullet, then, and the orifice of this third stomach, extends, through the two first, a long muscle capable of drawing up the third stomach, so as to receive alimentary matters directly from the gullet, when the immediate wants of the animal are to be supplied; but when the fluid taken is meant to be used only in its long journeys through the deserts, this muscle is relaxed, and it is thus received into the two first stomachs, and transmitted onwards by these only at the necessary intervals. The Arabs who traverse these extensive plains, accompanied by these useful animals, are, it is said, sometimes obliged, when faint, and in danger of perishing from thirst, to kill one of their camels, for the sake of the water contained in these reservoirs, which is always found pure and wholesome.

Compensation of Parts in Animated Nature.

The evidences of design in creation are beautifully developed in what is called the compensatory structure of animals. By this is signified the supplying the defects of one organ by the structure of another part or organ. Paley has summed up a few striking instances of this nature. 'The short unbending neck of the elephant,' says he, 'is compensated by the length and flexibility of his *proboscis*. He could not have reached the ground without it; or, if it be supposed that he might have fed upon the fruit, leaves, or branches of trees, how was he to drink? Should it be asked, Why is the elephant's neck so short? it may be answered, that the weight of a head so heavy could not have been supported at the end of a longer lever. To a form, therefore, in some respects necessary, but in some respects also inadequate to the occasions of the animal, a supplement is added, which exactly makes up the deficiency under which he laboured.

If it be suggested that this proboscis may have been produced, in a long course of generations, by the constant endeavour of the elephant to thrust out his nose (which is the general hypothesis by which it has lately been attempted to account for the forms of animated nature), I would ask, How was the animal to subsist in the meantime, during the process, *until* this prolongation of snout were completed? What was to become of the individual whilst the species was perfecting?

Our business at present is simply to point out the relation which this organ bears to the peculiar figure of the animal to which it belongs. And herein all things

correspond. The necessity of the elephant's proboscis arises from the shortness of his neck; the shortness of the neck is rendered necessary by the weight of the head. Were we to enter into an examination of the structure and anatomy of the proboscis itself, we should see in it one of the most curious of all examples of animal mechanism. The disposition of the ringlets and fibres, for the purpose, *first*, of forming a long cartilaginous pipe; *secondly*, of contracting and lengthening that pipe; *thirdly*, of turning it in every direction at the will of the animal; with the superaddition, at the end, of a fleshy production of about the length and thickness of a finger, and performing the office of a finger, so as to pick up a straw from the ground—these properties of the same organ taken together, exhibit a specimen not only of design (which is attested by the advantage), but of consummate art, and, as I may say, of elaborate preparation, in accomplishing that design.

The hook in the wing of a *bat* is strictly a mechanical, and also a *compensating*, contrivance. At the angle of its wing there is a bent claw, exactly in the form of a hook, by which the bat attaches itself to the sides of rocks, caves, and buildings, laying hold of crevices, joinings, chinks, and roughnesses. It hooks itself by this claw; remains suspended by this hold; takes its flight from this position: which operations compensate for the decrepitude of its legs and feet. Without her hook, the bat would be the most helpless of all animals. She can neither run upon her feet, nor raise herself from the ground. These inabilities are made up to her by the contrivance in her wing; and in placing a claw on that part, the Creator has deviated from the analogy usually observed in winged animals. A singular defect required a singular substitute.

The *crane* kind are to live and seek their food amongst the waters, yet, having no web feet, are incapable of swimming. To make up for this deficiency, they are furnished with long legs for wading, or long bills for groping; or usually with both. This is *compensation*. But I think the true reflection upon the present instance is, how every part of nature is tenanted by appropriate inhabitants. Not only is the surface of deep waters peopled by numerous tribes of birds that swim, but marshes and shallow pools are furnished with hardly less numerous tribes of birds that wade.

The common *parrot* has, in the structure of its beak, both an inconveniency and a *compensation* for it. When I speak of an inconveniency, I have a view to a dilemma which frequently occurs in the works of nature—namely, that the peculiarity of structure by which an organ is made to answer one purpose, necessarily unfits it for some other purpose. This is the case before us. The upper bill of the parrot is so much hooked, and so much overlaps the lower, that if, as in other birds, the lower chap alone had motion, the bird could scarcely gape wide enough to receive its food; yet this hook and overlapping of the bill could not be spared, for it forms the very instrument by which the bird climbs, to say nothing of the use which it makes of it in breaking nuts and the hard substances upon which it feeds. How, therefore, has nature provided for the opening of this occluded mouth? By making the upper chap movable, as well as the lower. In most birds the upper chap is connected, and makes but one piece, with the skull; but in the parrot, the upper chap is joined to the bone of the head by a strong ligament or membrane placed on each side of it, which lifts and depresses it at pleasure.

The *spider's web* is a *compensating* contrivance. The spider lives upon flies, without wings to pursue them; a case, one would have thought, of great difficulty, yet provided for, and provided for by a resource which no stratagem, no effort of the animal, could have produced, had not both its external and internal structure been specifically adapted to the operation.

In many species of insects the eye is fixed, and consequently without the power of turning the pupil to the object. This great defect is, however, perfectly *compensated*, and by a mechanism which we should not suspect. The eye is a multiplying glass, with a lens looking in every direction, and catching every object; by which means, although the orb of the eye be stationary, the field of vision is as ample as that of other animals, and is commanded on every side. When this lattice-work was first observed, the multiplicity and minuteness of the surfaces must have added to the surprise of the discovery. Adams tells us that 1400 of these reticulations have been counted in the two eyes of a drone-bee.

In other cases the *compensation* is effected by the number and position of the eyes themselves. The spider has eight eyes, mounted upon different parts of the head; two in front, two in the top of the head, two on each side. These eyes are without motion, but by their situation suited to comprehend every view which the wants or safety of the animal render necessary.

The Memoirs for the Natural History of Animals, published by the French Academy in the year 1687, furnish us with some curious particulars in the eye of a chameleon. Instead of two eyelids, it is covered by an eyelid with a hole in it. This singular structure appears to be *compensatory*, and to answer to some other singularities in the shape of the animal. The neck of the chameleon is inflexible. To make up for this, the eye is so prominent, that more than half of the ball stands out of the head; by means of which extraordinary projection, the pupil of the eye can be carried by the muscles in every direction, and is capable of being pointed towards every object. But then, so unusual an exposure of the globe of the eye requires, for its lubricity and defence, a more than ordinary protection of eyelid, as well as a more than ordinary supply of moisture; yet the motion of an eyelid, formed according to the common construction, would be impeded, as it should seem, by the convexity of the organ. The aperture in the eyelid meets this difficulty. It enables the animal to keep the principal part of the surface of the eye under cover, and to preserve it in a due state of humidity without shutting out the light; or without performing every moment a nictitation, which, in all probability, would be more laborious to this animal than to others.

But the works of the Deity are known by expedients. Where we should look for absolute destitution, where we can reckon up nothing but wants, some contrivance always comes in to supply the privation. A *snail*, without wings, feet, or thread, climbs up the stalks of plants by the sole aid of a viscid humour discharged from her skin. She adheres to the stems, leaves, and fruits of plants by means of a sticking plaster. A *mussel*, which might seem by its helplessness to lie at the mercy of every wave that went over it, has the singular power of spinning strong tendinous threads, by which she moors her shell to rocks and timbers. A *cockle*, on the contrary, by means of its stiff tongue, works for itself a shelter in the sand. The provisions of nature extend to cases the most desperate. A *lobster* has in its constitution a difficulty so great, that one could hardly conjecture beforehand how nature could dispose of it. In most animals, the skin grows with their growth. If, instead of a soft skin, there be a shell, still it admits of a gradual enlargement. If the shell, as in the tortoise, consists of several pieces, the accession of substance is made at the sutures. Bivalve shells grow bigger by receiving an accretion at their edge; it is the same with spiral shells at their mouth. The simplicity of their form admits of this. But the lobster's shell being applied to the limbs of the body, as well as to the body itself, allows not of either of the modes of growth which are observed to take place in other shells. Its hardness resists expansion, and its complexity renders it incapable of increasing its size by addition of substance to its edge. How, then, was the growth of the lobster to be provided for? Was room to be made for it in the old shell, or was it to be successively fitted with new ones? If a change of shell became necessary, how was the lobster to extricate himself from his present confinement?—how was he to uncase his buckler, or draw his legs out of his boots? The process which fishermen

have observed to take place is as follows:—At certain seasons the shell of the lobster grows soft; the animal swells its body; the seams open, and the claws burst at the joints. When the shell has thus become loose upon the body, the animal makes a second effort, and by a tremulous spasmodic motion, casts it off. In this state the liberated but defenceless fish retires into holes in the rock. The released body now suddenly pushes its growth. In about eight-and-forty hours, a fresh concretion of humour upon the surface—that is, a new shell—is formed, adapted in every part to the increased dimensions of the animal. This wonderful mutation is repeated every year.'

In the changing of the colour of the chameleon, we see one of the beautiful compensatory provisions of nature. This little animal, which is common in the East Indies and some other Asiatic countries, lives upon flies, beetles, or other insects, which it catches by climbing up shrubs or trees, and darting out its tongue; but its pace is slow, and as insects have good eyes to perceive the approach of an enemy, they would be sure to make their escape in the present case, unless the chameleon approached them in disguise. This, therefore, it invariably does. As it passes among green leaves, it is of a green colour; and when it glides by any of a red or yellow tinge, so does it change its hue to red or yellow. So closely does it assume not only the shades and colours, but even the shapes of the leaves around, that a spectator might look among the foliage for some minutes before discovering it.

By carrying our observation upward from the mere physical organisation of man, to the *mind* which he possesses, and is able to exert in reference to both sensible objects and abstract subjects, we have still greater reason to admire the proofs of design and goodness in an overruling Creator; for we all feel that this principle of mind—how constituted we do not here stop to inquire—is in harmony with the other works of creation around us. For example, how much are our minds suited to the recognition of what is beautiful and harmonious in nature and art. This, however, admits of a few separate observations:—

Beauty.

The wisdom of the great original Contriver is eminently manifested in that property of inanimate and animate objects which we call beauty. Here there is an evident fitness between the taste and habits of animals, human beings included, and what can be seen by the eye. We feel pleasure in contemplating the works of nature most obvious to our senses; and we cannot but remark, that that which is loathsome is not ordinarily presented to the eye. The splendid colouring of the vegetable kingdom, the smooth or spotted skins of the brute creation, and the lovely plumage of the feathered tribe, all give us delight in the contemplation. Consider, also, how beautiful is the outward appearance of the human form. Reflect on what the parts and materials are of which the fairest body is composed, and no further observation will be necessary to show how well these things are wrapped up, so as to form a mass which will be capable of symmetry in its proportion, and of beauty in its aspect; how the bones are covered—the bowels concealed—the roughness of the muscle smoothed and softened; how over the whole is drawn an integument, the skin, which converts the disgusting materials of a dissecting-room into an object of attraction to the sight, or one upon which it rests at least with ease and satisfaction.

The more minutely that we inspect the works of nature, the greater cause have we to wonder at the extraordinary perfection and beauty everywhere prevalent. The microscope develops splendours in the creation of insects which we can hardly comprehend. The back of a diamond-beetle exhibits an assemblage of brilliant colours and glittering gems more splendid than any artificial arrangement of the most precious stones. The colours of the feathers of birds in tropical climates, and the skins of the fishes of Ceylon, are incomparable for their beauty. And why is all this the case? Because it yields a pleasure to the sight, both of men and other living creatures; for the Creator has not denied the feeling of delight to the meanest reptile which crawls. All is beautiful, it would appear, in the estimation of one or other of living creatures. The most insignificant little flower, now blooming far from the haunts of men, in some remote wilderness, does not, as has been said, waste its sweetness on the desert air. It furnishes an object of pleasing gratification to some description of sentient creatures, perhaps so small as to be imperceptible to our naked eye.

Placing agreeableness of aspect entirely out of the question, there is another purpose answered by the skin—and that is concealment. Were it possible to view through this integument the mechanism of our bodies, the sight would frighten as much as it would disgust us. Durst we make a single movement, or stir a step from the place we were in, if we saw our blood circulating, the tendons pulling, the lungs blowing, the humours filtrating, and all the incomprehensible assemblage of fibres, tubes, pumps, valves, currents, pivots, which sustain an existence at once so frail and so presumptuous?

In clothing the human frame with a covering of skin, the Creator has not omitted to vary its character according to local necessities. The skin is most beautiful on the face, because the face is most exposed to observation; it is softest where least liable to injury, and hardest or firmest in texture where it is most subject to be pressed upon. There is not less sign of contrivance in the manner in which it ceases at the extremities of the toes and fingers. A man has only to look at his hand, to observe with what nicety and precision that covering, which extends over every other part, is here superseded by a different substance and a different texture. Why do we find the skin cease at our fingers' ends, or on the back part of the fingers, and not the fore part? Because something hard or horny was required on these parts, by which we could hold fast or lift nimbly objects which we wished to grasp or seize upon. Nails, therefore, supersede the skin on such places. The same forethought is visible in the covering of our heads. What could have been a more beautiful or appropriate substance wherewith to cover the head and preserve the hard bony skull from injury, than the hair, a substance at once light, warm, and graceful?

DESIGN IN VEGETABLE PHYSIOLOGY.

In accordance with our intentions in glancing through most of the natural sciences, and bringing home to the main object of our labours treasures illustrative of design from them all, let us now turn our attention to those afforded by the vegetable kingdom of nature. And first, of the mutual relations that exist between animals and vegetables; in considering which, we shall find that these two great organised kingdoms of the creation are made to co-operate in the execution of the same design; each ministering to the other, and preserving that due balance in the constitution of the atmosphere which adapts it to the welfare and activity of every order of beings, and which would soon be destroyed were the operations of any one of them to be suspended. 'It is impossible to contemplate so special an adjustment of opposite effects without admiring this beautiful dispensation of Providence, extending over so vast a scale of being, and demonstrating the unity of plan on which the whole system of organised creation has been devised.' We said in a former part of this essay that two principles of atmospheric air were oxygen and carbon; that the former was as essential to animal life as the latter was obnoxious to it; but that, on the other hand, carbon was indispensable to the continuance of vegetable organisations. We will now endeavour to explain this by a short account of the phenomena of respiration, as displayed in the two kingdoms.

Among animals, the function of respiration is that by which the blood, received into its vessels from the alimentary canal, is, during its subsequent circulation,

kept in a state of requisite purity. This is in all cases effected by bringing it at intervals into contiguity either with atmospheric air alone, or with water containing this air diffused through it; when such is the mutual action of the blood and the air upon each other, that the former is purified, and passes in general from a dingy purple to a bright scarlet colour, while the latter is in the same degree rendered impure, and after a time becomes inadequate to support either respiration or combustion. Now whether the aërating organs be lungs or gills, it appears to be the object of nature in their construction to expose a large surface to the contact of air. This object is accomplished by their division into numerous cells or leaf-like processes, or by their extension on the walls of cavities, or the surface of pectinated ridges. The blood brought to these organs is there distributed by their terminating branches. Although still retained in vessels, it can nevertheless be easily acted upon by the air on the exterior. Priestley found the colour of blood changed by the air when enclosed in a moistened bladder, and the same effect was observed by Hunter when it was covered with goldbeaters' skin. It is scarcely possible to determine by direct observation what is the exact nature of the changes that the blood undergoes in its passage through the lungs: the most obvious is its change of colour; and the chemical differences between the dark purple blood in the veins before it has reached the lungs, and the bright vermilion colour it exhibits in the arteries after it has circulated through the lungs, and been exposed to the influence of the air, may be collected from the changes made in the air itself. Atmospheric air is known to consist of certain principles in definite proportions; when it has acted upon the blood, and is returned from the lungs, it is found that a certain proportion of oxygen which it contained has disappeared, and that the place of this oxygen is almost wholly supplied by an addition of carbonic acid gas and watery vapour. The exact quantity of oxygen which is lost in natural respiration varies in different animals, and even in different conditions of the same animal. Birds, for instance, consume larger quantities of oxygen by their respiration, and hence require, for the maintenance of life, a purer air than other vertebrated animals. Vauquelin, however, found that many species of insects and worms possess the power of abstracting oxygen from the atmosphere in a much greater degree than the larger animals; thus snails are capable of living for a long time in the vitiated air in which a bird had perished. Some insects which conceal themselves in holes, or burrow under ground, have been known to deprive the air of every appreciable portion of its oxygen. It is observed by Spallanzani, that those animals whose modes of life oblige them to remain for a great length of time in these confined situations, possess this power in a greater degree than others which enjoy more liberty of moving in the open air; so admirably have the constitutions of animals been in every instance accommodated to their respective wants.

Now bearing in mind that the air coming in contact with the blood of animals parts with its oxygen, and receives in its place carbonic acid gas, let us consider the function of respiration, or, more properly, aëration, as it occurs in vegetables. It was necessary that some means should be appointed by which this great quantity of carbon given out into the air by animals, and so injurious to animal life, should be removed from it. We have said that this principle was necessary to vegetable life; and here we find the means not only by which, in a very considerable degree, it is procured, but also by which it is removed from the atmosphere. The leaves of plants are analogous to the lungs of animals, and it is in them principally that the decomposition of the carbonic acid absorbed from the air is effected. When exposed to the action of the sun, they decompose that gas, retain its carbon, and disengage its oxygen. Solar light is an essential agent in effecting this chemical change; for it is never found to take place at night, nor while the plant is kept in the dark. That the carbon resulting from this decomposition of carbonic acid is retained by the plant, has been most satisfactorily proved by the experiments of Saussure, who found that this process is attended with a sensible increase in the quantity of carbon which the plant had previously contained. 'Thus the great object to be answered by this vegetable aëration,' says Dr Roget, speaking at considerable length of this undeniable evidence of design to which we have thus shortly alluded, 'is exactly the converse of that which we see effected by the respiration of animals; in the former, it is adding carbon to the vegetable organisation; in the latter, it is that of discharging the superfluous quantity of carbon from the animal system. On the whole, therefore, the atmosphere is continually receiving from the vegetable kingdom a large accession of oxygen, and is at the same time freed from an equal portion of carbonic acid gas, both of which effects tend to its purification, and to its remaining adapted to the respiration of animals.'

We have not much space to devote to the contemplation of vegetables, but we are unwilling to leave the subject without alluding to some other evidences of design which we find displayed in them. Among these, nothing more beautifully demonstrates that nature, or rather the Almighty Creator of nature, proceeds on a uniformity of plan and design, than the fact that plants, as well as animals, are possessed of the means of reproducing and continuing their species. The pistil which occupies the centre of the flower is destined to produce the seeds, while the stamens of the plant contain the dust necessary for fertilising them, and without which the seeds would not produce young plants. Nature has guarded with nice care this precious dust, for on its preservation depends the continuance of the species. The apparatus by which in many flowers it is defended from injury, is very curious; nor are the means that are provided by which it comes in contact with the stigma of the pistil less demonstrative of a great, a wise, and a beneficent Providence. In some plants where the organs are in the same flower, the stamens are placed above the stigma, upon which the dust, or pollen, falls by its own gravity; in others, we find the contrary is the case, the pistil being the longest; but here the flower is generally drooping. To assist the emission of the pollen, and its contact with the stigma, in many plants the stamens possess a very apparent moving power. When ripe, the ten stamens of the rue are seen alternately to bend down upon the stigma, deposit their portion of pollen, and return to their former position. The stalks or filaments of the pellitory of the wall are possessed of a remarkable elasticity, and thus forcibly scatter the pollen. This is very apparent if touched by the point of a needle; immediately it acts with a jerk, which dashes the pollen with some force on the stigma. The same arrangement is met with in the barberry bush, in which the six stamens remain sheltered under the concave tips of the flower-leaves or petals, till some extraneous body, as an insect in search of honey, touches the filament, which instantly contracts, and also dashes the pollen against the stigma. But all plants have not their stamens and pistils sheltered under the same veil; in many they are in diffrent flowers, and in others even placed on different plants. Here, again, we have to admire the wise measures nature has taken for the accomplishment of her designs. In many, the scattering of the pollen is effected by the winds; to favour the access of which we find in some, as the hazel, the leaves are not evolved until after the seed has been perfected; or, if the plants be evergreens, the leaves are needle-shaped, so as to present very little obstacle to the passage of the pollen, which is secreted in much larger quantity than usual. Various species of insects, and especially the bee, are selected by nature for this purpose. In the pink we observe numerous small insects creeping to and fro, and thus depositing the pollen on the stigma. In flowers where the stamens and pistils are on different plants, often at a considerable distance

from each other, bees, and other flying insects, are peculiarly accessory to the great end of nature. These insects, it is true, do not visit the flower for the purpose of scattering the pollen; they only seek for the sweet juice which exudes from its nectary. Their hairy body, which nature did not bestow without design, is seen covered with pollen, often in such quantities as to impede the progress of the animal; this, whenever they visit another flower, is rubbed against the stigma; and it is a fact, no less wonderful than calculated to fill us with admiration at the wise provision of nature, that many insects are peculiarly attached to one flower, and that others, as the bee, will only visit one species in each journey from its hive.

The various methods which nature employs to disperse the different varieties of seeds over the earth are truly wonderful. Many plants, when the seed is fully ripe, discharge it from its covering with a jerk or elastic spring. The common oat is thrown out in this way; and the loud crackling of the pods of the broom in a dry sunshiny day, or, as Drummond has it, 'bursting seed-balls crackling in the sun,' is caused by their bursting and scattering about the contained seeds, and must have been frequently noticed. 'Who has not listened,' again asks Sir James Edward Smith, 'in a calm and sunny day, to the crackling of the furze bushes, caused by the explosion of their elastic little pods; or watched the down of innumerable seeds floating on a summer breeze till they are overtaken by a shower, which, moistening their wings, stops their farther flight, and at the same time accomplishes its final purpose, by immediately promoting the germination of each seed in the moist earth! How little are children aware, when they blow away the seeds of the dandelion, or stick burs in sport upon each other's clothes, that they are fulfilling one of the great ends of nature!' These downy appendages to which Sir J. E. Smith alludes, buoy up the lighter seeds, as the thistles, and carry them floating through the air to great distances. Then there are the currents of rivers which bear the seeds from one part of the country to another; and even seas and oceans, whose tides and currents float along the germs of vegetation to the various regions of the globe. Birds, too, by feeding on particular seeds, carry them to great distances, where, being often voided entire, they vegetate. There is evident design in all this. It could not have been by mere chance that in flowers which stand erect, the pistil is shorter than the stamens, permitting the pollen as it falls to descend upon the stigma; and when the flower is drooping, that the contrary arrangement is effected.

It is not here out of place to remark, that there is scarcely a vegetable production on which some species of animal does not subsist; and, generally speaking, wherever that peculiar production is to be found, there also is the animal to which it furnishes wholesome food. With some striking examples of this kind the most uneducated man is acquainted: he knows that the partridge is on the plain, the woodcock in the forests, the grouse on the moors, and the ptarmigan on the loftiest peaks of the mountains. He knows, too, that other species migrate from country to country, seeking their food in distant regions, over trackless oceans, when it fails in their native haunts; and, among the animal kingdom, so universal is this, as to form an example of the wonderful adaptations which exist between it and the vegetable world. Vegetables, like animals, are adapted to varieties of climate and temperature; and when we consider their distribution over the globe, we shall find that those which are most essential to the maintenance of man, bear a variety of climate better than most others. This is the case with greens, carrots, potatoes, and many kinds of grain. Warm climates are much more favourable to vegetation than cold. In Spitzbergen, the whole number of plants with conspicuous flowers, natives of the country, is found by botanists scarcely to exceed thirty species; while in the warmer regions of the West Indies, in Madagascar and the coast of Coromandel, Willdenow enumerates from four to five thousand different species of indigenous plants. Now observe how admirably this distribution of plants corresponds with the wants and necessities of man. A vegetable diet is most suitable both to the tastes and the actual needs of the inhabitants of warm climates, and there we find that kind of food most abundant.

It is impossible for a reflecting individual to walk beside a field of growing barley without being impressed with the conviction that, in the economy of this description of grain, the design of a Creator has been wonderfully manifested. An ear of barley differs from one of wheat or oats. Each of the grains is furnished with a long slender bristle or beard, which is prickly to the touch, and seems to serve as a protection to the ear. These bristles form a roof, if we may so call it, to carry off the rain from the ear, and yet, by their elegant disposition, do not prevent the heat of the sun and the light from influencing the grain. And why should such be the case with barley, when the ears of wheat, oats, &c. do not possess any such protective process? Because barley is a grain easily injured by wet, which, if not carried off, would cause the ear to sprout even while on the stalk, and consequently be entirely useless to man.

In speaking of the economy of vegetable life, it should not pass unnoticed that there is a remarkable instance of Creative Wisdom in the means which have been arranged for the growth of plants from putrescent matter. All kinds of vegetable and animal substances, when deprived of life, as well as excrementitious matter, have a tendency to decomposition—that is, to resolve themselves into those elementary gases of which they have been chiefly composed. This process of dissolution, as every one knows, produces a most disagreeable odour, which is often inimical to animal life. But this is not an evil; it displays a bountiful provision in nature; for it tells us, in a way not to be misunderstood, that the substance undergoing, or about to undergo, the putrefactive process, should be buried underground; and being there deposited, it immediately proceeds to supply its no longer useful gases to the infant plants and crops of grain which flourish on the surface. Thus do we see another striking evidence of the harmonious design which everywhere prevails between the animal and the vegetable creation.

It has been said that a vegetable diet is preferred by the inhabitants of warm countries: to them sobriety is an easy virtue, and a happy consequence of the climate. The people of northern regions, on the contrary, are voracious from instinct and necessity. They swallow enormous quantities of food, and prefer those substances which in digestion produce the most heat. Obliged to struggle incessantly against the action of cold, their life is but a continual act of resistance to external influences. Let us not reproach them with voracity, and their avidity for ardent spirits and fermented liquors. Those nations which inhabit the confines of the habitable world, in which man is scarcely able to withstand the severity of the climate, the inhabitants of Kamtchatka, the Samoiedes, &c. live on fish that, in the heaps in which they are piled up, have already undergone a certain degree of putrefactive fermentation. In them there is a necessity for this inward excitement, which in our climate would be inevitably attended with disease, and probably death. The abuse of spirituous liquors is fatal to the European transported to the burning climate of the West Indies. The Russian drinks spirituous liquors with impunity, and lives on to an advanced age, amidst excesses under which an inhabitant of the south of Europe would sink.

The influence of climate not only affects alike the regimen of man in health, but of man in sickness; and it has been justly observed of medicine, that it ought to vary according to the places in which it is practised. A few substances, for the most part obtained from the vegetable kingdom, sufficed to Hippocrates in the treatment of diseases; and physicians who practise in a climate such as Greece, may imitate the simplicity of the father of medicine. Opium, bark, wine, spirits, aromatics, and the most powerful cordials, are, on the other

hand, the medicines suited to the inhabitants of northern latitudes; and thus they are enabled to use freely those medicines which elsewhere would be attended with the utmost danger.

We are now prepared to understand the beautiful and wonderful harmony that exists between the distribution of man and plants over the globe; and no one, we think, can deny their meed of praise and admiration for the care and beneficence which this universal adaptation exhibits. The frigid zone contains but few species of plants, and the verdure of those countries which lie within the polar circle is confined chiefly to the hills having a southern aspect, and the trees are of very diminutive growth. Besides mosses and lichens, there exist ferns, creeping plants, and some shrubs yielding berries of an agreeable flavour. The arctic regions of Europe are peculiarly favoured; for in certain parts of Lapland there are fine forests, and even rye and leguminous plants are produced. In the high latitudes of the northern temperate zone are the pine and the fir, which show their adaptation to a cold climate by retaining their verdure in the midst of the regions of winter. To these, as advancing southward, succeed the oak, the elm, the beech, the lime, and other forest-trees. Several fruit-trees, among which are the apple, the pear, the cherry, and the plum, grow better in the northern half of this zone; while to its more southern parts, especially, belong the more delicate fruits, such as the olive, the lemon, the orange, and the fig; and among trees, the cedar, the cypress, and the cork. The space comprised between the 30th and the 50th parallels of latitude may be considered as the country of the vine and the mulberry. Wheat extends as far north as the 60th degree; oats and barley a few degrees farther. In the southern parts of this zone, maize and rice are more commonly cultivated. The vegetation of the torrid zone is characterised by a richness, a variety, and a magnificence which are nowhere to be found in the regions of the globe. Under the beams of a tropical sun, the most juicy fruits arrive at perfection; and innumerable productions supply the wants, and administer to the luxuries of man. There the grounds yield the sugar-cane, the coffee-tree, the palm, the pine-apple, the cotton-tree, the bread-tree, the pisang, the immense baobab, the date, the cocoa, the vanilla, the cinnamon, the nutmeg, the pepper, the camphor, and numerous other fruits and aromatics.

CONCLUSION.

But we must hasten to conclude our interesting subject. Illustrations of design might be produced from the works of nature without end; every link in the chain of creation teems with proofs of it; in none can any one affirm with truth that it is wanting. Cursory as our remarks have been, they still must lead to the general conclusion that not only design, but unity of design, and identity of operation, pervade the works of nature, in as far as relates to organised existences; and even among those portions of creation which are not organic, there do we find the same evident desire and design to render them subservient to the wants and necessities of those which are. To several of these we have alluded, though it did not accord with our plan to allude to all; and we need only further draw attention to the remarkable uniformity in the plan of creation. The universe itself is a system; each part depending upon other parts, or being connected with other parts by some common law of motion, or by the presence of some common substance. One principle of gravitation causes a stone to drop towards the earth, and the moon to wheel round it. One law of attraction carries all the different planets round the sun. New countries are continually discovered, but the old laws of nature are always found in them—new plants perhaps, or animals, but always in company with plants and animals which we already know, and always possessing many of the same general properties. We never get amongst such original or totally different modes of existence, as to indicate that we are come into the province of a new Creator, or under the direction of a different will. In truth, the same order of things attends us wherever we go. There is everywhere a perfect uniformity in the laws which regulate the phenomena of nature. And this very fact, while forcibly illustrating the unity of that Power by whose instrumentality all that we see was ordered and originated, demonstrates most strikingly at the same time the surpassing wisdom of the same creative Being. What agency, but one endowed with omniscience, could have educed results so mighty from a few simple and uniform laws!—could have instituted and set in action these laws at the first, assured that, without change, or shadow of change, they would fulfil to the last all the great objects connected with the progressive development of the scheme of the universe! Thus all that we behold around us, all that we can learn of nature, impresses us with a sense at once of the unity, omniscience, power, and goodness of the creative Being.

ETHICS.

A knowledge of the great truth which we have attempted to demonstrate, forms the foundation of Ethics, or Moral Philosophy, which may be defined to be 'the science which treats of our obligations and duties as moral and responsible agents.' These duties it has been customary to comprehend under three divisions—the duties which we owe to God, to our fellow-creatures, and to ourselves. It must not be supposed, however, that these several departments of duty, although arranged under different heads, are in the slightest degree opposed to one another. The very reverse is the case. They all harmonise together; and he, for example, who acts towards other men as he would wish them to act towards himself, affords the surest guarantee that he cherishes a due love and veneration for the Supreme Being, and that he entertains enlightened views regarding his own best interests; whereas of him who neglects the duties of justice, benevolence, and mercy, it may be truly said that he is destitute of those feelings which he ought to cherish towards the great Author of his being, and that he neglects the means by which his own happiness may be most effectually secured.

Considerable difference of opinion has existed regarding what has been termed 'the moral sense'—the generality of moralists contending that it is a principle implanted in us by the hand of nature, while others maintain that it is merely the result of cultivation and experience. There can be very little doubt, we apprehend, that the generally received opinion upon this subject is the correct one; for we cannot very easily conceive how, by any amount of cultivation, an important principle could be evolved out of a nonentity, or how it could be generated by the most varied experience, had not the germ of it previously existed in the human constitution. The advocates of the opposite opinion, however (among whom must be reckoned a distinguished ornament of ethical science, the soundness of whose moral principles at least has never been called in question), have apparently too much ground for the conclusion which they have arrived at. We see many atrocious criminals who seem to have cast off all moral restraint, and who act in such a manner as if they were totally unconscious of any distinction between right and wrong; and there are whole tribes of the human family to be found who appear to be immersed in such gross barbarism as to be utterly incapable of comprehending any such distinction. But we must not infer that in either of these cases the moral principle is altogether wanting. In neither, it is true, is it properly developed: but in the one case it is blunted and overborne by habits of lawless depravity; and in the other it has never been able to spring up into maturity, in consequence of the want of some friendly hand to pluck up the weeds, and to root out the briers which choke and impede its growth. In neither case is it dead: it only sleepeth; and by

the application of the proper remedy the reckless criminal may be made an exemplary member of society, and the ignorant and untutored savage may become acquainted with the blessings of civilisation. No: there is no human being, however immersed in ignorance, however degraded by crime, who is entirely devoid of this principle. Circumstances may indeed obscure it for a time, but it can never be altogether extinguished. Even the rudest barbarian knows that there is a Being infinitely superior to himself, to whom he owes homage and allegiance, however imperfect may be his conceptions of the character of that Being, or of the nature of the allegiance which is due to Him. This is sufficiently attested by the fact, that in those countries where no rational system of religion exists, a multitude of superstitious ceremonies and observances have been substituted in its place.

But how does even civilised man arrive at the knowledge of moral relations? The mere circumstance of his believing in the existence of an almighty, wise, and beneficent Being, who at first created, and still continues to uphold, the world, does not necessarily imply that he deems it his duty to worship and to serve that Being. Before he can be made aware of this necessity, the moral sense must be aroused; and this can be effectually done only by the cultivation and enlargement of his intellectual faculties. Before an individual can rationally worship God, he must be conscious of the relation in which he stands to Him; he must feel that God is his creator and preserver. By observing the traces of design discernible in the material universe, he is necessarily led to conclude that it is the work of a designing mind; and when he discovers the admirable adaptation of external nature to his own constitution, physical, intellectual, and moral, the inference is unavoidable, that the same Being who created the one also formed the other. After he has been enabled to arrive at this conclusion, the moral sense comes immediately into exercise; and he will then feel it to be his duty to love and obey the great Author of his existence, who has made such bountiful provision for the supply of his wants and for the gratification of his desires. And the more he discovers of these wonderful adaptations, the more will his sense of the obligations he is under to the Deity be increased, and consequently the greater will be his ability to love and serve Him. We could feel no affection for a Being on account of his having bestowed existence upon us, if mere existence had been the only circumstance for which we were indebted to Him. He might have created us for the express purpose of rendering us miserable; and then, according to the present constitution of our nature, instead of being disposed to love and venerate a Being so malignant, we must unavoidably have regarded Him with horror and detestation. The sense of benefits conferred is an essential pre-requisite to the feeling of gratitude; and it is therefore evident that the untutored savage cannot entertain such a lively degree of this feeling towards the Almighty, as the man of cultivated intellect, who can penetrate into the secrets of nature, and trace out its adaptations to the necessities of his own complicated existence. The former may indeed feel an emotion of gratitude to the 'Great Spirit' for his success in war or in the chase, or for those spontaneous productions of the earth which supply his bodily wants and contribute to his animal gratification; but the man of cultivated taste can experience an exquisite enjoyment in contemplating the beauties of creation, and can appreciate the Divine goodness in furnishing him with the means of such enjoyment. And those phenomena of nature which terrify the savage, and cause him to have recourse to the most unmeaning ceremonies to avert the wrath of an angry and avenging Spirit, are regarded by the philosopher as the procedure of a wise and beneficent Being, who makes the elements the ministers of his pleasure, and sends forth the tempest and whirlwind for the purpose of clearing away those noxious exhalations which engender disease and death. We do not mean to affirm that the highly-cultivated theist will actually be disposed to cherish towards the Deity deeper feelings of veneration, gratitude, and love, than the rude illiterate barbarian; but we have no hesitation in asserting, that from his acquaintance with external nature, and its nice adaptations to the peculiar constitution of man, the former will be rendered more capable of entertaining such feelings than the latter; and that the farther this acquaintance is extended, the more will this capability be increased.

The same acquaintance with external nature, and with its adaptation to his own state and circumstances, by which man acquires a knowledge of the duties which he owes to God, teaches him also those duties which he owes to himself and his fellow-creatures; and if he is anxious to promote his own happiness, he will feel the necessity of acting in conformity with the system which God has appointed. The Deity could have had no other end in view, in the formation of any of His creatures, than the benevolent one of rendering them happy; and He has instituted certain laws, by an adherence to which this important purpose will be most effectually accomplished. Whenever, therefore, man acts in accordance with the appointment of the Supreme Ruler of the universe, he fulfils the great end and object of his being, and consequently will enjoy that happiness of which his nature is susceptible; but when he acts in opposition to that appointment, he will necessarily experience suffering and misery—for no institution of the Deity can be violated with impunity.

But man is not an isolated being: he is a member of a great community of creatures of a nature similar to his own; and he feels that between them and himself there exists a mutual relation. Hence arises the conception of that order of duties which he owes to his fellow-creatures. It is a part of the Divine plan that all the members of the human race should live in harmony together; and in accordance with this plan, it is necessary that each should do everything in his power to promote the welfare of others, and that all should practise those virtues which are essential to the very existence of civil society. Now were each individual of the human family to be actuated solely by selfish motives, and were all to neglect or violate, without scruple, the virtues and duties of social life, then it is evident that the order of society would be deranged, the Divine plan for the happiness of the human race would be defeated, and universal suffering to individuals and communities would be the inevitable result. By the faithful discharge of these duties, on the other hand, the harmony and prosperity of mankind would be promoted, individual happiness would be secured, and the most acceptable homage would be rendered to the Deity; who, having instituted certain laws for the guidance and regulation of His creatures, is gratified or displeased with them in proportion as they observe or violate His wise and beneficent appointments.

Thus we see that all the departments of man's duty are inseparably connected together, and that the faithful discharge of one class of these duties naturally leads to the performance of all the rest. And as a knowledge of these duties, in as far as it is attainable by the unaided light of reason, is to be learned from a diligent observation of the laws of nature, and of man's relation to them, it is the duty of every human being carefully to study these laws, and to use his utmost endeavours to bring his conduct into conformity with them. Were such conduct to become universal, all strife and animosity would be brought to an end, the whole members of the human family would be knit together in one common bond of brotherhood; and that peace, prosperity, and happiness which are only to be found in the fabled descriptions of the Golden Age, would overspread and gladden the earth. Beyond this, Natural Theology and Ethics, even in their highest and purest conceptions, cannot lead: the causes which retard such a consummation, the Divine scheme for their removal, and a knowledge of man's future destiny, belong to religion as revealed in the BIBLE—the history of which forms the subject of our following number.

HISTORY OF THE BIBLE—CHRISTIANITY.

THE Bible is the most remarkable work now in existence. In the libraries of the learned there are frequently seen books of an extraordinary antiquity, and curious and interesting from the nature of their contents; but none approach the Bible, taken in its complete sense, in point of age; while certainly no production whatever has any pretension to rival it in the dignity of composition, or the important nature of the subjects treated of in its pages. The word *Bible* is of Greek origin, and in signifying simply *the Book*, is expressive of its superiority over all other literary productions. The origin and nature of this in everyway singular work—how it was preserved during the most remote ages, and how it became known to the modern world in its present shape—form a highly-interesting chapter of literary history.

OLD TESTAMENT.

The Bible comprehends the foundation of the religious belief of the Jews and Christians, and is divided into two distinct portions, entitled the Old and New Testament, the former being that which is esteemed by the Jewish nation, but both being essential in forming the faith of the Christian. The Old Testament is the largest department of the work, and appears a collection of detached histories, moral essays, and pious poetical compositions, all placed together in the order of time, or as they may serve for the purpose of mutual illustration. On taking a glance at the contents, the principal subject of narration seems to be the history of the Jews, commencing with an account of the creation of the world, and tracing their history, genealogically, through a series of striking vicissitudes and changes of situation. But when we examine the narratives minutely, it is found that there is another meaning than that of mere historical elucidation. It is perceived that the whole train of events recorded, and the whole of those lofty impassioned strains of poetry which distinguish the volume, are precursory and prophetic of a great change which, at a future period, was to be wrought on the moral character and fate of mankind, by the coming to the earth of a Messiah.

The authorship of the Old Testament has been universally ascribed, by both Jews and Christians, to pious men, who were inspired or influenced by God to communicate to the world a correct knowledge of the foundations of religious belief and moral obligation. The Bible is hence called the Revealed Word of God, or the Sacred Scriptures. 'We are to look to the Word of God, then,' says the writer of the article THEOLOGY in the 'Edinburgh Encyclopædia,' 'as contained in the Scriptures of the Old and New Testaments, for the only sure rule of faith and practice. But there is this singularity in the Sacred Scriptures, that we do not find in them a set treatise on any one of the interesting subjects which engage our attention as moral and religious beings. No attempt is made to prove the existence of a God: such an attempt would have been entirely useless, because the fact is universally admitted. The error of men consisted not in denying a God, but in admitting too many; and one great object of Scripture is to demonstrate that there is but one. No metaphysical arguments, however, are employed for this purpose. The proof rests on facts recorded in the history of the Jews, from which it appears that they were always victorious and prosperous so long as they served Jehovah, the name by which the Almighty made himself known to them; and uniformly unsuccessful when they revolted from him to serve other gods. What argument could be so effectual to convince them that there was no God in all the earth but the God of Israel? The sovereignty and universal providence of the Lord Jehovah are proved by predictions delivered by the Jewish prophets, pointing out the fate of nations and of empires, specifying distinctly the cause of their rise, the duration of their power, and the reason of their decline; thus demonstrating that *one* God ruled among the nations, and made them the unconscious instruments of promoting the purposes of His will.

The writers, generally speaking, do not reason, but exhort and remonstrate; they do not attempt to fetter the judgment by the subtleties of argument, but to rouse the feelings by an appeal to palpable facts. But though there is no regular treatise in the Scriptures on any one branch of religious doctrine, yet all the materials of a regular system are there. The Word of God contains the doctrines of religion in the same way as the system of nature contains the elements of physical science. In both cases the doctrines are deduced from facts, which are not presented to us in any regular order, and which must be separated and classified before we can arrive at first principles, or attain to the certainty of knowledge; and in both cases a consistent system can only be made out by induction and investigation. The very circumstance of no detailed system being given, renders it necessary to form one; for although a portion of religious and physical knowledge, sufficient for the common purposes of life, may be obtained by traditional information, and men may work conveniently enough by rules without possessing much general knowledge, yet they who would teach with profit, must generalise, and they who would explain the ways of God, must arrange the materials which are so amply furnished, but which are presented apparently without order or plan.'

The periods when the act of writing all or greater part of the Scriptures took place, as well as most of the names of those who were instrumental in forming the work, have been ascertained with considerable accuracy, both from written evidence in the narratives themselves, and from the well-preserved traditions of the Jews. Generally speaking, it cannot be said that the books of the Old Testament are of a less antiquity than from two thousand three hundred to four thousand years—an antiquity considerably greater than that of any profane history. At whatever time, however, the different books were written, they were not collected from the sacred depositories of the Jews, where they had been carefully placed, till long after their immediate authors were deceased; and their present arrangement, as we shall afterwards explain, is of comparatively modern date.

From an early period it was the custom of the Jews to divide the books of the Old Testament into three classes, which they respectively designated the *Law*, the *Prophets*, and the *Hagiographa*, or *Holy Writings*, which last division includes more particularly the *poetical* parts; and some are of opinion that Jesus Christ alludes to this division of the Scriptures, when he says that 'All things must be fulfilled that were written in the *Law of Moses*, and in the *Prophets*, and in the *Psalms*, concerning him.' For by the book of *Psalms* they understand all the books of the third class. The *Law* comprehends the *Pentateuch*—that is, Genesis, Exodus, Leviticus, Numbers, and Deuteronomy—such including both a historical narrative, and the injunctions forming the legal code of the Jews. The prophetical books are eight—namely, 1. *Joshua*; 2. *Judges*, with *Ruth*; 3. *Samuel*; 4. *Kings*; 5. *Isaiah*; 6. *Jeremiah*; 7. *Ezekiel*; and 8. The *Twelve Lesser Prophets*. The first four books of this division are called the *Former Prophets*, and the last four the *Latter Prophets*. The *Hagiographa*, or *Holy Writings*, are nine—namely, 1. *Job*; 2. The *Psalms*; 3. The *Proverbs*; 4. *Ecclesiastes*;

5. The *Song of Songs*; 6. *Daniel*; 7. *Chronicles*; 8. *Ezra*, with *Nehemiah*; and 9. *Esther*.

According to the order in which the books of the Old Testament now stand, those of a historical nature are appropriately placed at the beginning. The first five books, having a chain of connection throughout, are Genesis, Exodus, Leviticus, Numbers, and Deuteronomy. These are styled the *Pentateuch*, such being the Greek compound for *five books*. They are likewise entitled the Books of Moses, from the belief that that enlightened Jewish leader composed them.

The Jews, or Hebrews, take the name of the sacred books from the first word with which each begins; but the Greeks, whom our translators generally follow, take the names from the subject-matter of them. Thus the first book is called by the Hebrews *Bereshith*, which signifies *In the beginning*, this being the first word; but the Greeks call it *Genesis*, which signifies *Production*, because the creation of the world is the first thing of which it gives an account. It likewise contains an account of the increase of mankind; of their corruption of manners, and its cause; of their punishment by the Deluge; of the origin of the Jewish people from Abraham; of the manner in which God was pleased to have them governed; and particularly of the nature of the special superintendence vouchsafed to the Jewish nation by the Creator. This comprehensive narrative reaches from the creation of the world till the death of Joseph, or a period of 2369 years. (See CHRONOLOGY.)

Exodus, the title of the second book of Moses, signifies in Greek *The going out*, and was applied from the account which it gives of the Israelites going out of Egypt. In it are related the cruel Egyptian slavery under which the Jews groaned; their delivery by flight and a passage through the Red Sea; the history of the establishment of their very peculiar law, and many remarkable transactions; concluding with the building of the Tabernacle, or place appropriated to the service of the Divinity. This book comprises the history of 145 years, from the death of Joseph till the building of the Tabernacle. The Hebrews call it *Veelle Shemoth*—that is, in English, *These are the names*, which are the words with which the book begins.

The third book of Moses is called *Leviticus*, because it contains the laws which God commanded should be observed by those of the tribe of *Levi* who ministered at the altar. It treats at large of all the functions of the Levites; of the ceremonial of religion; of the different sorts of sacrifices; of the distinction of clean and unclean beasts; of the different festivals; and of the year of jubilee, or continued holiday. It likewise presents us with an account of what happened to the Jews during the space of one month and a-half—that is, from the time the Tabernacle was erected—which was the first day of the first month of the second year after the Israelites came out of Egypt—till the second month of the same year, when God commanded the people to be numbered. The Hebrews call this book *Vayiere*—that is, *And he called*, these being its first words; they call it also the *Law of the Priests*.

In the fourth book, which we call *Numbers*, Moses numbers the Israelites, and that, too, in the beginning of the book, which shows whence it had its name. The Hebrews call it *Vayedavber*—that is, *And he spake*. This book contains the history of all that passed from the second month of the second year after the Israelites came out of Egypt, till the beginning of the eleventh month of the fortieth year—that is, it contains the history of thirty-nine years, or thereabouts. In it we have also the history of the prophet Balaam, whom the king of the Midianites brought to curse the people of God, and who, on the contrary, heaped blessings upon the Israelites, and foretold the coming of the Messiah. It particularly mentions, also, the two-and-forty encampments of the Israelites in the wilderness.

The fifth book is called *Deuteronomy*, a Greek term, which signifies *The second law*, or rather, *The repetition of the law*, because it does not contain a law different from that which was given on Mount Sinai; but it repeats the same law, for the sake of the children of those who had received it there, and had since died in the wilderness. The Hebrews call it *Elle-haddebarim*—that is, *These are the words*. Deuteronomy begins with a short account of what had passed in the wilderness, and then Moses repeats what he had before commanded in Exodus, Leviticus, and Numbers, and admonishes the people to be faithful in keeping the commandments of God. After this he relates what had happened from the beginning of the eleventh month to the seventh day of the twelfth month of the same year, which was the fortieth after their leaving Egypt. The discourse which is at the beginning of this book was made to the people by Moses on the first day of the eleventh month. According to the Jewish historian Josephus, Moses died on the first day of the twelfth; and the Israelites, as the Scripture says, mourned for him in the plains of Moab thirty days, and consequently during the whole of the twelfth month.

The Jews call the Pentateuch the *Law*, without doubt because the law of God, which Moses received on Mount Sinai, is the principal part of it; and it is as little to be doubted whether that great man was the writer of the Pentateuch. This is expressly declared both in Exodus and Deuteronomy. But as an account of the death of Moses is given in the last eight verses of this book, it is therefore thought that these verses were added either by Joshua or Ezra. The opinion of Josephus concerning them is very singular: he assumes that Moses, finding his death approaching, and being willing to prevent an error into which the veneration the people had for him might cause the Jews to fall, wrote his account himself; without which the Jews would probably have supposed that God *had taken him away*, like the patriarch Enoch.

After the death of Moses, Joshua, by Divine command, took upon himself the conducting of the Hebrew people, and succeeded Moses, to whom he had been a faithful servant, and by whom he had been instructed in what he ought to do. It is uncertain whether the book which contains the history of this successor of Moses be called *Joshua*, from the subject of it, or from his having been the writer of it. But it is certain that it contains an account of what passed from the death of Moses to that of Joshua. Nevertheless, there are several things in it which did not come to pass till after the death of this great man, and which, consequently, could not have been written by him. The common opinion as to the length of time it contains is, that Joshua discharged his office only for seventeen years, and that therefore this book contains no more than the history of that number of years.

After the death of Joshua, the Israelites were governed by magistrates, who ruled under the general designation of *Judges*; and the book which contains the history of these rulers is called the *Book of Judges*. This history begins with the death of Joshua, and reaches to that of Samson. We here see the people of God often enslaved in punishment of their crimes, and often wonderfully delivered from slavery. Towards the end of it, we have some instances of this people's inclination to idolatry, and of the corruption of their manners, even before they had been brought into slavery. Such are the histories of Micah, and of the Benjaminites who abused the Levite's wife. This book contains the history of about three hundred years.

During the time of the government of Judges, there was a great famine in the land of Israel, which forced Elimelech, a native of Bethlehem, to retire into the land of Moab, with his wife Naomi and two children. Elimelech died there, as also his two sons, who had married two Moabitish women, one of whom was named Ruth. Naomi, after the death of her husband and her children, returned to Bethlehem, accompanied by Ruth, her daughter-in-law, who was there married to Boaz, Elimelech's near relation, and the heir to his estate. The book which contains this history is called the *Book of Ruth*. The beginning of it shows that it happened in the time of the Judges, but under which of them is not

certainly known: some place it in the time of Shamgar, or of Deborah. As to the writer of this book, some think that the books of Judges and Ruth were both written by Samuel; others attribute them to Hezekiah, and others to Ezra. The Jews place the book of Ruth among the five books which they usually read on all the festivals in the year. These five books are, the Song of Songs, Ruth, the Lamentations of Jeremiah, Ecclesiastes, and the book of Esther. In the Bibles used by the Jews they are printed or written apart by themselves, and are bound up together.

The four books following Ruth are called by the Greeks, and also in some Latin Bibles, the *History of the Reigns*. Others call them all the *Books of Kings*, because they give an account of the establishment of the monarchy, and of the succession of the kings, who reigned over the whole kingdom at first, and over the kingdoms of Judah and Israel after its division. At the beginning of these books is the history of the prophet Samuel, which gives light to that of the kings. The Jews call the first two of these books the *Books of Samuel;* perhaps because they contain the history of the two kings who were both anointed by Samuel, and because what is said of Saul in *the first*, and of David in *the second*, proves the truth of Samuel's prophecies. They give the name of the *Books of Kings* only to the other two, which in the Latin and French Bibles are called the *third* and *fourth Books of Kings*.

The *first Book of Kings*, or the *first of Samuel*, contains the history of the high-priest Eli, of his successor Samuel, and of Saul, and extends over a period of nearly eighty years.

The *second* contains the reign of David, which is the history of about forty years. It is commonly believed that Samuel, Nathan, and Gad, were the writers of these two books; and indeed they are called, in the end of the first book of *Chronicles*, *David's historians*.

The *third*, or, according to the Hebrews, the *first Book of Kings*, begins with a relation of the manner in which Solomon came to the throne, and contains the whole of his reign. After that, an account follows of the division of the kingdom, and the history of four kings of Judah and eight kings of Israel. All these reigns, including that of Solomon, which occupies the first forty years, comprise the space of 126 years.

The *fourth* of these books contains the history of sixteen kings of Judah and twelve kings of Israel; and embraces a period of three hundred years. It likewise gives an account of the prophets who lived during this time. It is quite uncertain who were the writers of the two last-mentioned books. They are by some attributed to Jeremiah or Ezra, but no very convincing proofs have been adduced in support of this opinion. It is evident, indeed, that these books form a varied collection of several particular histories.

The name of *Paralipomena*, which in Greek signifies the *history of things omitted*, is given to the two books which follow those of the *Kings*. These form, in fact, a supplement, containing what had been omitted in the *Pentateuch*, and the books of *Joshua*, *Judges*, and *Kings;* or rather they contain a fuller description of some things which had been therein only briefly related. Some give them the name of *Chronicles*, because they are very exact in mentioning the time when every transaction happened. We divide them into two books, as do also the Jews, who call them *Dibere Hayamim*—that is, a *Historical Journal*, the matters of which they treat having been taken from the Journals of the Kings. In the original language, however, the word *days* often signifies *years*, and in this sense we may understand the term to signify properly *Annals*. The generally received opinion is, that Ezra was the compiler of these. In the *first* book, he begins with a succinct historical abridgment, from the creation of Adam to the return of the Jews from their captivity; and then he resumes the history of David, and carries it on to the consecration of Solomon—that is, down to the year before Christ 1015. The history contained in the *second book* reaches down to the year before Christ 536, when, upon the expiration of the seventy years of the captivity, Cyrus gave the Jews leave to return to their own country.

Ezra wrote the history of the return of the Jews from the captivity of Babylon into Judea. It is the history of about eighty-two years, from the year of the world 3468, when Cyrus became master of the Eastern Empire by the death of his father Cambyses in Persia, and his father-in-law Cyaxeres in Media, to the year 3550, which was the twentieth year of the reign of Artaxerxes, surnamed Longimanus. This book bears the name of Ezra, who was the writer of it.

The next book is a continuation of that of Ezra, and therefore it is by some called *the second book of Ezra*. It was Nehemiah, however, whose name it also bears, who wrote it, as is said, by the advice of Ezra. It contains the account of the re-establishment of Jerusalem, and of the Temple, and the worship of God. It is believed by some commentators to embrace the history of about thirty-one years; but its chronology is, on the whole, exceedingly uncertain.

After this general history of the Jews, follow two histories of particular persons—namely, *Esther* and *Job*. The first contains the account of a miraculous deliverance of the Jews, which was accomplished by means of the heroine named Esther. The history of Job is not only a narration of his actions, but contains also the entire discourses which this pious man had with his wife and his friends, and is indeed one of the most eloquent and poetic books in the Holy Scriptures. It is uncertain who was the author.

Next to the *historical* books of Scripture follow those of a moral nature. The first of these is the book of *Psalms*, which are likewise in some measure historical; for they recite the miracles which God had wrought, and contain, as it were, an abridgment of all that had been done for the Israelites, and that had happened to them. The Hebrews call them the *Book of Praises*, by which they mean, *of the praises of God*. The word *psalm* is Greek, and properly signifies the sound of a stringed instrument of music. The Hebrews sung the psalms with different instruments. We make but one book of them all, but the Hebrews divide them into five parts, which all end with the words *Amen, Amen*. Though the Psalms bear the name of David, yet they were not all composed by him: some of them are more ancient, and others are of a later date than his time; some of them being ascribed to Moses, Samuel, and Ezra. Speaking of the dedication of the second Temple, Prideaux says, 'In this dedication, the 146th, the 147th, and the 148th Psalms, seem to have been sung; for in the Septuagint versions they are styled the *Psalms of Haggai and Zechariah*, as if they had been composed by them for this occasion; and this, no doubt, was from some ancient tradition; but in the original Hebrew, these Psalms have no such title prefixed to them, neither have they any other to contradict it.' It is not probable, however, that all those whose names they bear were the actual authors of them: it is more likely that these are only the names of those to whom they were first given to sing.

After the Psalms are the *Proverbs*, which are a collection of moral sentences, of which Solomon was the writer. This name is given them by the Greeks, but the Hebrews call them *Misle*—that is, *Parables*, or *Comparisons;* and the word may also signify *Sentences*, or *Maxims*. It is a collection of precepts, proper for every age and every condition of life.

The book which follows is also a *moral* one, and was likewise composed by Solomon. The Greeks call it *Ecclesiastes*, which answers to the name of *Koheleth*, which it bears in the Hebrew. Both these words signify in our language *a preacher*, or *one who speaks in an assembly*. In this book is given an admirable picture of the vanity of worldly expectations.

Among the *moral* books is also reckoned the *Song of Songs*—that is to say, according to the Hebrew manner of speaking, *a most excellent song*. It is an inspired production of Solomon, in the allegorical form of an *epithalamium*, or nuptial song significant of the mar-

riage and fellowship between Christ and his people: 'Its majestic style,' says Brown, 'its power on men's consciences to promote holiness and purity, the harmony of its language with that of Christ's parables, and of the book of Revelation; the sincerity of the bride in acknowledging her faults, and, in fine, its general reception by the Jewish and Christian church, sufficiently prove its authenticity.'

In regard to the Prophets, it may be observed that all the Old Testament is considered to be in substance one continued prophecy of the coming of a Messiah; so that all the books of which it consists are understood to be in some sense *prophetical*. But this name is more especially given to those books which were written by persons who had a clearer knowledge of futurity, who forewarned both kings and people of what would happen to them, and who at the same time pointed out what the Messiah was to accomplish, whom they who are acknowledged to have been prophets had always in view; and this is what ought most especially to be taken notice of in their writings.

The prophecies bear the names of those to whom they belong. Some learned men are of opinion that the Prophets made abridgments of the discourses which they had written, and fixed them up at the gates of the Temple, that all the people might read them; and that after this the ministers of the Temple might take them away, and place them among the archives, which is the reason why we have not the Prophecies in the order in which they were written. But the interpreters of Scripture have long since laboured to restore that order according to the course of their history.

The works of the Prophets are divided into two parts, the first of which contains the *Greater*, and the second the *Lesser Prophets*. This distinction of course does not apply at all to the persons of the prophets, but only to the bulk of their works. The *Greater Prophets* are Isaiah, Ezekiel, Daniel, and Jeremiah. The *Lamentations* of Jeremiah make a separate book by themselves, containing that prophet's descriptions of the destruction of the city of Jerusalem and of the captivity of the Jewish people. The *Lesser Prophets* are Hosea, Joel, Amos, Obadiah, Jonah, Micah, Nahum, Habakkuk, Zephaniah, Haggai, Zechariah, and Malachi. Their prophecies were formerly contained in a single volume, which the Hebrews call *Thereaser*, which means *Twelve*, or the *Book of the Twelve*.

The dates of many of the prophecies are uncertain, but the earliest of them was in the days of Uzziah, king of Judah, and Jeroboam the Second, his contemporary, king of Israel, about two hundred years before the captivity, and not long after Joash had slain Zechariah, the son of Jehoiada, in the court of the Temple. Hosea was the first of the writing prophets; and Joel, Amos, and Obadiah, it appears, promulgated their prophecies about the same time.

Isaiah began his remarkable prophecies a short time afterwards; but his book is placed first, because it is the largest of them all, and is more explicit respecting the advent of Christ than any of the others. The language of this eminent writer is exceedingly sublime and affecting; so much so, that it has never been equalled by any profane poet either in ancient or modern times. It is impossible to read some of the chapters without being struck by the force of the prophetic allusions to the character and sufferings of the Messiah; and in consequence of these prevailing characteristics, the author is ordinarily styled the *Evangelical Prophet*, and by some of the ancients, a *Fifth Evangelist*. The Jews say that the spirit of prophecy continued forty years during the second Temple; and Malachi they call the Seal of Prophecy, because in him the succession or series of prophets broke off, and came to a period. The book of Malachi, therefore, appropriately closes the sacred record of the Old Testament.

By referring to our historical sketch of the Jewish people (No. 55), it will be observed that the glory of Israel vanished at the period of the conquest and captivity of the nation, about six hundred years before Christ. As a consequence, though not an immediate one, the inspired writings of the Old Testament were concluded soon after this event, or probably four hundred years before the coming of the Messiah. Thus a period of from four to five centuries elapsed from the time when Malachi concluded his prophetic enunciations, till that in which the Evangelists penned the books descriptive of Christ's life and ministrations.

NEW TESTAMENT.

The second and lesser division of the Bible, as has been said, relates entirely to the Christian religion, or the fulfilment of that which was predicted and prefigured in the more ancient department of the work. This division of the Sacred Scriptures is generally styled the *New* Testament, or that which has been a later revelation and bequest; that portion of it which relates to the history of the life of Christ is called the *Gospel*, and by some the *Evangel*, both these words having the same meaning, and implying *good news*, or *glad tidings*, from the circumstance that the narratives contain an account of things which are to benefit mankind.

The New Testament, like the Old, is a compilation of books written by different inspired individuals, and all put together in a manner so as to exhibit a regular account of the birth, actions, and death of Christ—the doctrines he promulgated—and the prophecies regarding the future state of the church which he founded. The historical books are the four *Gospels* and the *Acts of the Apostles*, all these being of the character of narratives of events; the doctrinal are the Epistles of Paul, and some others; the prophetic book is the last, and is called the *Revelations* or *Apocalypse of St John*, having been written by that apostle while he was in exile in the island of Patmos.

The four Evangelists, or writers, are Matthew, Mark, Luke, and John; these having, as is generally believed, been companions of Christ during his ministrations, and therefore personally acquainted with his life and character. Each of the four books is principally a repetition of the history of Christ, yet they all possess a difference of style, and each mentions some circumstances omitted by the others, so that the whole is essential in making up a complete life of the Messiah. These distinctions in the tone of the narratives, and other peculiarities, are always considered as strong circumstantial evidence in proof of their authenticity, and of there having been no collusion on the part of the writers. But indeed the events they record are detailed in so exceedingly simple and unaffected a manner, that it is impossible to suppose that they were written with a view to impose on the credulity of mankind. The veracity and actual belief of the Evangelists themselves are placed beyond a doubt.

The first book is written by Matthew, who was by birth a Jew, and exercised the profession of a publican—that is, a collector of the public tax or assessment imposed upon the Jewish people by their conquerors the Romans. Matthew, who was also called by the name of Levi, was one of the twelve apostles of Christ, and he is said to have written his narrative from thirty to forty years after the departure of his Master from the earth. Many of the ancients say that he wrote it in the Hebrew or Syriac language; but it is more probable that there were two originals—one in Hebrew, and the other in Greek, the former written A.D. 37 or 38, and the latter A.D. 61; and that these were respectively designed for the Hebrew and Gentile nations.

With regard to Mark, the writer of the second Gospel, it may be observed that although Mark or Marcus was a common Roman name, there is reason to believe that this Evangelist was a Jew, who had changed his original appellation on being converted to the faith of Christ. Jerome says, that after the writing of this Gospel, he went into Egypt, and was the first that preached the Gospel at Alexandria, where he founded a church, to which he offered an example of holy living.

The Gospel of St Mark is much shorter than that of Matthew, not giving so full an account of Christ's ser-

mons as that did, but insisting chiefly on his miracles; and in regard to these also it is very much a repetition of what we have in Matthew, many remarkable circumstances being added to the incidents there related, but not many new matters. There is a tradition that it was first written in Latin, because it was written at Rome; but this is generally thought to be without foundation, and that it was written in Greek, as was St Paul's Epistle to the Romans, the Greek being the more universal language. The Gospel of Mark was written at a somewhat later period than that of Matthew.

Luke, the name of the third Evangelist, is considered by some to be a contraction of *Lucilius;* and he is said by St Jerome to have been born at Antioch. Some think that he was the only one of all the penmen of the Scriptures that was not of the Israelites; that he was a Jewish proselyte, and was converted to Christianity by the ministry of St Paul at Antioch; and that, after the coming of Paul into Macedonia, Luke was his constant companion. He had employed himself in the study and practice of physic; and hence Paul calls him *Luke the beloved Physician.* It is deemed probable that Luke wrote both his gospel and his narrative of the *Acts of the Apostles* at Rome, when he was there a prisoner with Paul, *preaching in his own hired house*—circumstances alluded to at the conclusion of the latter work. If this be the case, Luke's Gospel may be dated about thirty years after Christ's departure, or A.D. 63. Jerome says that St Luke died when he was eighty-four years of age, and that he was never married. Dr Cave observes, that 'his way and manner of writing are accurate and exact, his style polite and elegant, sublime and lofty, yet perspicuous; and that he expresses himself in a vein of purer Greek than is to be found in the other writers of this holy history.' Thus he relates several things more copiously than the other Evangelists, and thus he especially treats of those things which relate to the priestly office of Christ.

The fourth Evangelist, John, was one of the sons of Zebedee, a fisherman of Galilee, the brother of James, one of the Twelve Apostles, and distinguished by the honourable appellation of *that disciple whom Jesus loved.* The ancients tell us that John lived longest of all the Apostles, and was the only one of them that died a natural death, all the rest suffering martyrdom. It is now established that he wrote his Gospel about the year 97 or 98, when he was of an extremely old age. And it is believed, on good authority, that he was prevailed upon to undertake this important task by the solicitations of the Christian teachers, in order to counteract the mischievous effects produced by the doctrines of a sect, or rather of a multitude of sects, who were distinguished by the general denomination of Gnostics, and whose tenets were openly taught by Cerinthus before the publication of this Gospel. In a work like the present it would be entirely out of place to enter into a minute account of the tenets of the Gnostics; we may merely mention that the fundamental principle of their system was the inherent and incorrigible depravity of matter. In accordance with this principle, they made a complete separation between spiritual and material objects; maintaining that the Supreme Being merely presided over the spirits who had emanated from himself; and that an inferior being created the world, and bestowed existence upon the different grades of its inhabitants. They further held that mankind were kept under the thraldom of matter, but that a glorious messenger was to be sent, by the compassion of the Supreme Being, for the purpose of effecting their deliverance. The Christian Gnostics believed that Christ was this messenger. In opposition to this system John clearly teaches, that the Creator of the world, and the Saviour of the human race, is one and the same person, and declares in the plainest language that this person is Christ.

After the Gospel, or History of Jesus Christ, follows the history of what passed after his ascension, and was transacted by the Apostles. The book, therefore, which contains this history is called the *Acts of the Apostles.* It is a history of the rising church for about the space of thirty years. It was written, as has been already observed, by St Luke the Evangelist, when he was with St Paul at Rome, during his imprisonment there. In the end of the book he mentions particularly his being with Paul in his dangerous voyage to Rome, when he was carried thither a prisoner; and it is evident that he was with him when, from his prison there, Paul wrote his epistles to the Colossians and Philemon, for in both of these Luke is named by him.

Next to this come the *Epistles of St Paul,* which are fourteen in number: one to the Romans; two to the Corinthians; one to the Galatians; one to the Ephesians; one to the Philippians; one to the Colossians; two to the Thessalonians; two to Timothy; one to Titus; one to Philemon; and one to the Hebrews. They contain that part of ecclesiastical history which immediately follows after what is related in the Acts. The principal matter contained in them is the establishment or confirmation of the doctrine which Jesus Christ taught his disciples. According as the difficulties which raised disputes among the Christians, or the heresies which sprang up in the church from the first age of it, required, St Paul in these epistles clears up and proves all matters of faith, and gives excellent rules for morality. His Epistles may be considered as a commentary on the four books of the Gospel.

The Epistle to the *Romans* is placed first, not because of the priority of its date, but on account of its superlative excellence, it being one of the longest and fullest of all, and perhaps also on account of the dignity of the place to which it is addressed. It is gathered from some passages in the Epistle, that it was written in the year of Christ 56, from Corinth, while Paul made a short stay there on his way to Troas. He was then going up to Jerusalem with the money that was given to the poor saints there; which is spoken of in the fifteenth chapter of the Epistle.

The two Epistles to the *Corinthians* were written about a year after that to the Romans—namely, A.D. 57; that to the *Galatians,* A.D. 56; to the *Ephesians,* A.D. 61; to the *Philippians,* A.D. 62; to the *Colossians,* A.D. 62; two to the *Thessalonians,* A.D. 51 and 52; the first to *Timothy,* A.D. 64; the second to *Timothy,* A.D. 66; to *Titus,* A.D. 65; to *Philemon,* A.D. 62; and that to the *Hebrews,* A.D. 62. From which chronology it appears that the Epistles of St Paul are placed in the New Testament rather according to the dignity of the cities to which they were sent, than according to the order of time in which they were written; for the Epistles to the Thessalonians were those he wrote first, though that to the Romans is placed before them. Interpreters are agreed that the last Epistle which he wrote was the second to Timothy.

St Paul wrote to the churches of some particular places, or to some particular persons; but the other Epistles which follow his are called *Catholic* (that is, universal), because, with the exception of the second and third of St John, they were not addressed to any particular church or individual, as his were, but to the whole Christian Church in general. These Epistles are —one of St James; two of St Peter; three of St John; and one of St Jude. The date of most of these Epistles is extremely uncertain, but the most generally-received chronology of them is as follows:—That of St James, A.D. 61; of St Peter, A.D. 66 and 67; of St John, A.D. 86 and 90; of St Jude, A.D. 66.

It has sometimes occurred to the minds of well-disposed persons, that it would have been better for Christianity had there never been any other record of its origin and doctrines than the writings of Matthew, Mark, Luke, and John. But however plain and satisfactory the histories of these Evangelists may be, and however little they admit of controversy, it may, on the other hand, be observed, that the strong arguments and illustrations brought forward in the Epistles by Paul and others, were necessary, in order to combat the sophistry of the Greeks and the self-sufficient philosophies of other nations. Paul, the chief of the Epistle

writers, who became a Christian by conversion, after Christ had departed from the earth, is the great champion of the faith, and exposes, in strong and perspicuous language, the hidden depravities of the human heart; so that, where the affecting discourses and sufferings of the Messiah fail to convert and to convince, the reasoning of this great writer is calculated to silence and subdue those who stubbornly resist the benignant influence of the Christian faith.

Such, then, were the various books written to convey to posterity a faithful account of Christ's life and mission, and consequently of the religion which it was his purpose to institute. It will have been observed that the whole were inscribed within the first century, and gradually accumulated in the hands of the primitive church, as an imperishable basis on which the faith of Christians should be founded.

AUTHENTICITY OF THE SCRIPTURES—APOCRYPHA.

With respect to the authenticity of both the Old and New Testament books, as generally received, we of course look to the estimation in which they were respectively held by those with whom they had been deposited, and who unquestionably possessed the best evidences of their credibility. The Jews, as is well known, were most scrupulous in preserving entire the works of their inspired writers, and in preventing the intrusion of literal errors into the copies which were from time to time transcribed. Of the fidelity of the original text, there cannot, we think, be any reasonable doubt; and although there are what are called various readings, these are of an exceedingly unimportant character. Referring to this subject, it is said by the learned Dr Adam Clarke, 'that all the omissions of the ancient manuscripts put together, would not countenance the omission of any essential doctrine of the Gospel, relative to faith or morals; and all the additions countenanced by the whole mass of manuscripts already collated, do not introduce a single point essential either to faith and morals, beyond what may be found in the Complutensian or Elzevir editions.' Among other means adopted by the Jews to preserve the integrity of the Scriptures, was that of noting and recording the exact number of words, verses, points, and accents, in each book. The duty of doing so was the province of the Jewish doctors or learned men, called Masorites. By these acute grammarians, all the verses of each book and of each section were numbered, and the amount placed at the end of each in numerical letters, or in some symbolical word formed out of them; the middle verse of each book was also marked, and even the very letters were numbered; and all this was done to preserve the text from any alteration by either fraud or negligence. For instance, Bereshith, or Genesis, is marked as containing 1534 verses, and the middle one is at—'And by thy sword thou shalt live' (xxvii. 40). The lines are 4395; its columns are 43; and its chapters 50. The number of its words is 27,713, and its letters are 78,100. The Masoritic notes, or Masorah, as the work is called, contain also observations on the words and letters of the verses; for instance, how many verses end with the letter *samech*; how many there are in which the same word is repeated twice or thrice; and other remarks of a similar nature.

It seems now generally agreed upon that the Masorites of Tiberias, during the fourth century of the Christian era, were the inventors of the system of the *vowel-points and accents* in the Hebrew Bible; and although they multiplied them very unnecessarily, it must be allowed that they were an improvement of considerable importance (See BIBLIOGRAPHY). From the *points* we learn how the text was read in their time, as we know they were guided in affixing them by the mode of reading which then prevailed, and which they supposed to have been traditionally conveyed down from the sacred writers.

The respect which the Jews have uniformly paid to the sacred books has been almost allied to superstition. They are directed to be written upon parchment, made from the skin of a clean animal, and to be tied together with strings of similar substance, or sewn with goats' hair which has been spun and prepared by a Jewess. It must be likewise a Jew that writes the Law, and they are extremely diligent and exact in it, because the least fault profanes the book. Every skin of parchment is to contain a certain number of columns, which are to be of a precise length and breadth, and to contain a certain number of words. They are to be written with the purest ink, and no word is to be written from memory; it must be first orally pronounced by the copyist. The name of God is directed to be written with the utmost attention and devotion, and the transcriber is to wash his pen before he inscribes it on the parchment. If there should chance to be a word with either a deficient or a redundant letter, or should any of the prosaic part of the Old Testament be written as verse, or *vice versâ*, the manuscript is vitiated. No Hebrew manuscript with any illumination is, on any account, admitted into a synagogue, although private individuals are permitted to have them ornamented for their own use; but in the illustrations, the resemblance of any animal denounced by the Jews as unclean cannot be admitted. Among the modern Jews, the Book of Esther, in particular, is frequently decorated with rude figures of various kinds; but with respect to this book, it must be observed, that owing to its wanting the sacred name of God, it is not held in such repute for holiness as the other books are. The manuscripts for private use may be either upon parchment, vellum, or paper, and of various sizes. 'There is,' says Prideaux, 'in the church of St Dominic, in Bononia, a copy of the Hebrew Scriptures, kept with a great deal of care, which they pretend to be the original copy, written by Ezra himself; and therefore it is there valued at so high a rate, that great sums of money have been borrowed by the Bononians upon the pawn of it, and again repaid for its redemption. It is written in a very fair character, upon a sort of leather, and made up in a roll, according to the ancient manner; but its having the vowel-points annexed, and the writing being fresh and fair, without any decay, both these particulars prove the novelty of that copy.'

To open and shut up the roll or book of the Law, to hold it, and to raise and show it to the people, are three offices which are sold, and bring in a great deal of money. The skins on which the Law is written are fastened to two rollers, whose ends jut out at the sides beyond the skins, and are usually adorned with silver; and it is by them that they hold the book when they lift it up, and exhibit it to the congregation; because they are forbidden to touch the book itself with their hands. All who are in the synagogue kiss it, and they who are not near enough to reach it with their mouths, touch the silken cover of it, and then kiss their hands, and put the two fingers with which they touched it upon their eyes, which they think preserves the sight. They keep it in a cupboard, which supplies the place of the ark of the covenant, and they therefore call this cupboard *Aron*, which is the Hebrew name for the *Ark*; and this is always placed in the east end of the synagogue. He who presides chooses any one whom he pleases to read and explain the Scripture, which was a mark of distinction, as we see in the thirteenth chapter of the *Acts*, where we find *the rulers of the synagogue* desiring the apostles, when they were in the synagogues, to make a discourse to the people. Ordinarily speaking, a *priest* began, a *Levite* read on, and at last one of the people, whom the president chose, concluded. He who reads stands upright, and is not suffered so much as to lean against a wall. Before he begins, he says with a loud voice, *Bless ye God*, and the congregation answers, *Blessed be thou, O my God; blessed be thou for ever;* and when the lesson is ended, the book is rolled up, and wrapped in a piece of silk.

Certain books, collectively termed the *Apocrypha*, are sometimes included in the Bible, and of these it is necessary to give a brief account. The term Apocrypha

is Greek, signifying *hidden* or *concealed*, and is applied to those books whose origin is unknown, or the authenticity of which is either doubtful or absolutely denied. Some writers divide the sacred books into three classes—the canonical, the ecclesiastical, and the apocryphal. In the first they place those whose authority has never been questioned in the catholic or universal church; in the second, those which were not received at first, but which were nevertheless read in the public assemblies, as books that were useful, though they never placed them upon the same footing of authority as the former; and in the third, they placed the books which were of no authority, which could not be made to appear in public, but were kept *hidden*, and were therefore called *apocryphal*—that is, *concealed*, or such as could not be used in public. 'Let us lay aside those books which have been called *apocryphal*,' says St Augustine, 'because their authors were not known to our fathers, who have, by a constant and certain succession, transmitted down to us the authority and truth of the Holy Scriptures. Though some things in these apocryphal books are true, yet as there are in them multitudes of others which are false, they are of no authority.'

The Apocrypha consists of *fourteen* books—namely, *First* and *Second Esdras*, *Tobit*, *Judith*, the rest of the chapters of the book of *Esther*, the *Wisdom of Solomon*, *Ecclesiasticus*, *Baruch*, the *Song of the Three Holy Children*, the *History of Susanna*, the *Story of Bel and the Dragon*, the *Prayer of Manasses*, and the *First and Second Book of the Maccabees*. Biblical historians assert that these books were of a later composition than the other parts of Scripture, never existed in the proper Hebrew tongue, and were at no time received by the Jews as the writings of inspired men. It is the general belief of such Scripture critics as have made this subject their study, that the whole or greater part of the Apocrypha, was written between the time of the Babylonish captivity and the appearing of Christ, and by persons who had mixed with the Greeks and other foreign nations. The apocryphal books, it is observed, are never quoted in the New Testament, or by the Jewish writers Philo and Josephus; and by the early councils of the church they were formally excluded from the canon. On these points, however, as is well known, there exists a great difference of opinion—the Roman Catholic Church viewing the apocryphal books as canonical, and the Protestants entirely setting them aside, or using them only as works of ordinary edification, or for the light which they throw on the phraseology of Scripture and the history and manners of the East. With respect to the meaning and application of the term *canonical*, we here append a note.*

* The meaning of this term will be gathered from the following explanations in the *Encyclopædia Americana* (Conversations Lexicon):—'The term *canon* (Greek) signifies a measure, rule, or standard; thence canon is used to denote the rule or standard of primitive Christianity. The same term is employed to designate the collection of books containing this rule—that is, the canonical books of the Holy Scriptures which the church acknowledges. The canon of the books of the Old Testament, as drawn up by the Jews in the fourth century before Christ, receives in this form equal respect among all Christians, because Christ and his apostles have expressly appealed to them, and pronounced them writings inspired by God. The apocryphal books of the Old Testament, whose canonical character the Jews did not acknowledge, the Eastern [or Greek] Church has never received; but the Western [or Roman] Church declared them canonical, in the African Council, about the end of the fourth century.' What follows is said to be the explanation of a Catholic:—'The Holy Scriptures are esteemed sacred by the Catholics, because the church has transmitted them from age to age as sacred, and illustrative of revelation, as far as any writings can be. The church has only declared what writings have been handed down as of Divine origin. The catalogue of these Holy Scriptures is the canon; the writings themselves are called canonical books. In this sense the Protestant Church has no canon: it rejects the authority of all traditions of the church. Hence, in order to be consistent, it must leave every Protestant, on free investigation, to decide what books he will regard as canonical. But the Bible, the pillar of the Protestant faith, is made up of separate canonical books; and by pursuing such a course, the basis of the Protestant faith might be undermined. It has been agreed, therefore, however inconsistently, to adopt the New Testament canon of the Catholic Church. But in fixing the canon of the Old Testament, the decisions of the Catholic Church have been rejected; and contrary to the African Councils and the usage of the Romish Church, established by the Council of Trent, part of Esther, also Baruch, Tobit, Judith, Wisdom, Ecclesiastious, or Jesus the Son of Sirach, the Two Books of Maccabees, the Song of the Three Youths in the Fiery Furnace, described in Daniel, together with the last two chapters of this prophet, are thrown out as uncanonical or apocryphal. It is worthy of mention that a controversy on this subject broke off the negotiations for a union of the Catholic and Protestant Churches, which commenced in the beginning of the eighteenth century between Leibnitz, Molanus, and Bossuet.' The above explanation is scarcely correct, as respects the Protestant idea of the canon of Scripture. The Church of England, for example, does not implicitly adopt the Roman Catholic canon: it founds its rule of faith on that which is believed to have been the canon in the earliest centuries of Christianity. 'The Church of England, in determining the sense of the Bible, listens with respect to the voice of the most ancient fathers and doctors: and not only with respect, but even with submission, where that voice is all but unanimous.'—*Life of Jewel.* 'The Council of Trent confirmed the decision of some previous councils, by which the books of the Apocrypha were declared to belong to the canon of the Old Testament; contrary to that of the Council of Laodicea, A. D. 364, which, by an express canon, sanctioned the catalogue of the sacred books as received by Protestants.'—*Josiah Conder's View of all Religions.*

While attempts have been made to intrude uncanonical books into the authentic body of ancient Scripture, the New Testament has been exposed to similar vitiation. In the third and fourth centuries, there were gospels forged by divers sects, and published, one under the name of St Peter, another of St Thomas, another of St Philip, &c. They were never owned, however, by the church, nor was any credit given to them, as the learned Dr Whitby shows; and he gives this good reason why we should adhere to records written at or near the time of Christ—'Because,' says he, 'whatever the pretences of tradition may be, it is not sufficient to preserve things with any certainty, as appears by experience. For whereas Christ said and did many memorable things which *were not written*, tradition has not preserved any one of them to us, but all is lost except what was written; and that therefore is what we must abide by.'

What has been said of the integrity of the text of the Old Testament, may be applied also to the New, in as far as it may be charged with corruptions in consequence of the negligence of transcribers. Though it must be admitted that the New Testament text, by being more frequently transcribed than the Old, became liable to a greater proportion of various readings, originating from the mistakes of the transcribers, yet this very circumstance was likewise a sure protection against wilful perversion or corruption; for in proportion as copies were multiplied, the difficulty of effecting a general corruption was increased. No such system as that of the Masorites was ever adopted to preserve the purity of the New Testament text; but we have it in our power to use various means for ascertaining what is the true reading of the text, without having recourse to such a plan as that of the Masorah; and Concordances, which are now brought to an uncommon degree of perfection, are of great use in preserving it from corruption. But the most satisfactory assurance that the books of the New Testament have been transmitted to the present times in their original purity, is to be found in the fact, that at a very early period a great variety of sects sprung up, and have continued to prevail, to a greater or less extent, in all ages of the church. This circumstance, although in many respects it is matter of regret, is yet attended with this signal advantage, that it rendered any material corruption of the oracles of Divine truth utterly impossible. The adherents of these various sects regarded all who differed from them in a single article of their religious creed with the utmost jealousy and

suspicion, and with all that unseemly rancour and animosity which theological disputants, in all ages and countries, have been unfortunately too prone to indulge; and as they all pretended that their conflicting systems of belief were founded on the Scriptures, any vitiation of these sacred books, in order to accommodate them to a particular system, would at once have been detected and exposed. But no such detection or exposure has ever taken place. The conductors of theological controversies have indeed often disgraced both themselves and the cause they espoused, by ascribing vile motives and unworthy conduct to those whose tenets they were attempting to overthrow; but they have never ventured directly to accuse them of vitiating the Scriptures. The charge which they bring against their opponents is, not that they have altered or corrupted the Word of God, but that they have put an erroneous interpretation upon it. These sectarian jealousies and animosities, therefore, afford the strongest possible evidence that the books of the New Testament have come down to us pure and uncorrupted, since any attempt to alter their meaning, by the interpolation or omission of a single word, would most assuredly have been proclaimed to the world by a host of watchful and jealous opponents. It need only be added, that we have the consent of the Christian Church, in all ages and countries, to prove the fidelity of the New Testament Scriptures; and any variety occurring in the readings in modern times can arise only from heedlessness, or from motives of an improper kind.

With respect to the credibility, on general grounds, of the New Testament writers, and that the books are of that antiquity usually assigned to them, there cannot be any reasonable doubt; in other words, the writers wrote the books in perfect good faith, believing that what they penned was true, and the very books are those now before us in the New Testament. On these points an able divine remarks—'It must be esteemed a strong circumstance in favour of the antiquity of the New Testament, that on a subject in which the chances of detection are so numerous, and where we can scarcely advance a single step in the narrative without the possibility of betraying our time by some mistaken allusion, it stands distinguished from every later composition, in being able to bear the most minute and intimate comparison with the contemporary historians of that period. The argument derives great additional strength from viewing the New Testament, not as one single performance, but as a collection of several performances. It is the work of no less than eight different authors, who wrote without any appearance of concert, who published in different parts of the world, and whose writings possess every evidence, both internal and external, of being independent productions. Had only one author exhibited the same minute accuracy of allusion, it would have been esteemed a very strong evidence of his antiquity. But when we see so many authors exhibiting such a well-sustained and almost unexpected accuracy through the whole of their varied and distinct narratives, it seems difficult to avoid the conclusion, that they were either the eye-witnesses of their own history, or lived about the period of its accomplishment.'

A minor point in the history of the Bible now requires to be noticed. In the earliest times, the writings of the Old Testament were divided into books and short paragraphs equivalent to verses; but the division into chapters and verses in which they now appear was of a much later date. The separation of both the Old and New Testament books into chapters and verses is by some writers ascribed to Arlott, a Tuscan monk, or rather to Hugh Cardinalis, in the thirteenth century; while others allege that from the comments of Theophylact on the Gospel, this must have been effected two centuries earlier. The question is one of no great importance, and it is sufficient for the purposes of general knowledge to be informed that the division of the Scriptures into chapters and verses was the work of a Roman Catholic divine some time between the eleventh and thirteenth centuries.

MODERN HISTORY OF THE BIBLE.

It will have been gathered from the preceding details that the books of the Old Testament were originally written in the Hebrew language, that being the tongue spoken by the ancient Jewish people; and that the books were inscribed on rolls or sheets of carefully-prepared parchment, and deposited only in the Temple, or preserved in the hands of the highest officers of religion. In this condition, and either in the Hebrew or Chaldaic tongue, they existed till translated into the language of the Greeks, under the name of the Septuagint. With respect to the exact period at which this translation was effected, history presents no uniform account. The translation is ordinarily assigned to seventy Jewish elders or interpreters—and hence the term *Septuagint*, which signifies seventy—who were employed by the Egyptian ruler Ptolemy Philadelphus, to furnish a copy of the Scriptures in Greek, a language with which he and his people were acquainted. Whether the narration of this circumstance, which is said to have occurred 277 years before the Christian era, be conformable with credible history, it is at least certain that the translation called the Septuagint was effected by Jews skilled in the Greek tongue at about the time specified, and it was afterwards held in high esteem by the Sanhedrim at Jerusalem. It may further be explained that it was this Greek version of the Scriptures which was always quoted by our Saviour and his apostles, whenever they made an appeal to the Sacred Writings. With the earliest organisation of the Christian Church may be said to have commenced a new era in the history of the Bible. The Old Testament books, whether in the form of Hebrew, Chaldaic, or Greek versions, were still cherished by the Hebrew priesthood, as they are at this day; but copies were likewise accessible to the early Christians, and by these pious apostles and disciples they were treasured as the prophetic testimony of God's eternal design for the salvation of mankind, in the grand event which had now actually occurred—the coming of Jesus Christ.

When the books of the New Testament were collected and authenticated by the early fathers and other members of the Christian Church, they were held in equal esteem with those of the Old, and carefully preserved along with them. Though still in detached manuscripts, they were generally in the Greek tongue; but during the first three centuries of our era, Latin, or the language of the Romans, came largely into use in literature, and in the same manner as the modern European languages in later times superseded the Latin, so did the Latin supersede the Greek. Augustine (born 354—died 430) mentions that previous to his time there existed a great number of Latin versions of the Scriptural writings. 'We know those who translated the Scriptures into *Greek*,' says he, 'and the number of them is not great; but the number of the *Latin* translators is infinite. When the faith came to be established, the first man who found a Greek copy, notwithstanding the little knowledge he had of the two languages, boldly undertook a translation of it.' From another passage of his writings it has been generally concluded that there was one particular version, called 'the Italian,' in higher estimation than the rest, and which was the authorised version of the Roman churches. However this may be, it is certain that the Latin Church required a version of the Scriptures formed directly from the Hebrew, as all the Latin translations in existence at that time had been taken from the SEVENTY. Jerome, who was the contemporary of Augustine, was in every respect best suited, of any of the learned men of that time, to the task of effecting a new translation, which he accordingly undertook. He began by correcting some books of the Old Testament in the Latin Bible, particularly the version of the Psalms, and marked those passages wherein any difference existed between the Latin version, the Greek of the Seventy, and the Hebrew original. He had early applied himself to the study of the Hebrew language,

and at different periods had the assistance of five Jewish teachers; he had access also to the works of Origen, who published what is called the *Hexapla*—that is, the Bible in *six* different languages. From these he must have derived considerable assistance in the work he undertook—that of translating into Latin all the books of the Old Testament, to which he added a corrected edition of the common version of the New.

The work thus ascribed to Jerome (or St Jerome, as he is ordinarily called) received the name of the *Vulgate*, and both by Christians and Jews has been considered a faithful translation. It was sanctioned by the Council of Trent, since which time corrected editions have been published under the authority of the Pope Sextus V. and Clement VIII. By the Roman Catholic Church the Vulgate is held in the highest esteem, and is reckoned equivalent in value to the Scriptures in the original tongues.

This seems to us the most proper place to notice—what must be clear to every one's comprehension—that for the safe custody and verification of the Scriptures, from the period at which the New Testament books were collected, we are indebted to the church, or, to speak more plainly, that series of ecclesiastical functionaries whose history is extended from the apostolic times till the present. Until the Bible, therefore, was secured to the people by the greatest of all mechanical applications, the art of printing, and in that respect placed beyond the reach of private interpolation or error, its safety, as a record, was dependent on the care and affection of the church; and for the faithful performance of that important service, no one surely will refuse a due meed of thankfulness and praise. From motives no doubt conscientious, many who have made the Bible in their hands may consider the church a valueless institution; but to this incorporation are they unquestionably indebted for preserving the Scriptures through ages of persecution and civil uproar. From the era of Augustine and Jerome, when copies of the sacred books came into considerably greater request by the scattered branches of the church, transcripts were effected by priests, and latterly by monks, with a diligence and accuracy which demand our utmost esteem and approbation. In the cells of monasteries, surrounded by hordes of barbarous nobles and their serfs, learning found refuge from oppression; and there, in the darkest ages of European history, were humble and pious ecclesiastics engaged, certainly from no worldly consideration, in penning copy after copy of the Sacred Writings, and bequeathing them as memorials of their industry to future and more fortunate generations.

Both before and after the application of printing to multiply copies of the Bible, translations, either direct from the original tongues, or from the Greek versions, were effected by almost every people to whom Christianity was introduced. Thus copies of the Scriptures in Arabic, Persian, Sclavonic, and other tongues, were produced. One of the most ancient of these is that translated for the use of the Armenian Christians in the fifth or sixth century.* Portions of the Scriptures are understood to have been translated into Anglo-Saxon, for use in the first British churches, as early as the sixth or seventh centuries; and the whole Bible was translated by Bede, an eminent Romish ecclesiastic, in the beginning of the eighth century. The first English Bible we read of was that translated by Wickliffe, one of the earliest English reformers, about the year 1360, but never printed. The part of the English Bible first printed was the New Testament, translated by William Tindal, assisted by Miles Coverdale; it was printed abroad in 1526, but, giving offence to the church, was bought up and burnt. In 1532, Tindal and his associates finished the whole Bible except the Apocrypha, and printed it abroad; but while he was afterwards preparing for a second edition, he was taken up and burnt for heresy in Flanders. On Tindal's death, his work was carried on by Coverdale and John Rogers, superintendent of an English church in Germany, and the first martyr in the reign of Queen Mary, who translated the Apocrypha, and revised Tindal's translation, comparing it with the Hebrew, Greek, Latin, and German, and adding prefaces and notes from Luther's Bible. He dedicated the whole to Henry VIII. in 1537, under the borrowed name of Thomas Matthews; whence this has been usually called *Matthews's Bible*. It was printed at Hamburg, and license obtained for publishing it in England by the favour of Archbishop Cranmer and the Bishops Latimer and Shaxton. The first Bible printed by authority in England, and publicly set up in churches, was the same Tindal's version, revised, compared with the Hebrew, and in many places amended, by Miles Coverdale, afterwards bishop of Exeter, and examined after him by Archbishop Cranmer, who added a preface to it; whence this was called *Cranmer's Bible*. It was printed by Grafton, was of large size, and published in 1540; and, by a royal proclamation, every parish was obliged to set one of the copies in its church, under the penalty of forty shillings a month; yet, two years after, the bishops obtained its suppression by the king. It was restored under Edward VI., suppressed again under Queen Mary, and restored again in the first year of Queen Elizabeth, and a new edition of it given in 1562. Some English exiles at Geneva in Queen Mary's reign—namely, Coverdale, Goodman, Gilbie, Sampson, Cole, Whittingham, and Knox, effected a new translation, printed there in 1560—the New Testament having been printed in 1557—hence called the *Geneva Bible*, containing the variations of readings, marginal annotations, &c. on account of which it was much valued by the Puritan party in that and the following reigns. Archbishop Parker resolved on a new translation for the public use of the church, and engaged the bishops and other learned men to take each a share or portion. These being afterwards joined together, and printed with short annotations in 1568, in large folio, made what was afterwards called the *Great English Bible*, and commonly the *Bishop's Bible*. In 1589 it was also published in octavo, in a small, but fine black-letter: and here the chapters were divided into verses; but without any breaks for them, in which the method of the Geneva Bible was followed, which was the first English Bible where any distinction of verses was made. It was afterwards printed in large folio, with corrections, and several prolegomena, in 1572: this is called *Matthew Parker's Bible*. The initial letters of each translator's name were put at the end of his part. The archbishop oversaw, directed, examined, and finished the whole. This translation was used in the churches

* 'For the more commodious comparison of different versions, many of them have been sometimes joined together. In his eightfold Bible, Origen placed, in different columns, a Hebrew copy, both in Hebrew and in Greek characters, with six different Greek versions. Elias Hutter, a German, about the sixteenth century, published the New Testament in twelve languages—namely, in Greek, Hebrew, Syriac, Latin, Italian, Spanish, French, German, Bohemian, English, Danish, Polish; and the whole Bible in Hebrew, Chaldaic, Greek, Latin, German, and a varied version. But the most esteemed collections are those in which the originals and ancient translations are conjoined, such as the Complutensian Bible, by Cardinal Ximenes, a Spaniard; the King of Spain's Bible, directed by Montanus, &c.; the Paris Bible, by Michael Jay, a French gentleman, in ten large folio volumes, copies of which were published in Holland under the name [or sanction] of Pope Alexander VII.; and that of Brian Walton, afterwards bishop of Chester. This last is the most regular and valuable: it contains the Hebrew and Greek originals, with Montanus's interlineary version; the Chaldee paraphrases, the Septuagint, the Samaritan Pentateuch, the Syriac and Arabic Bibles, the Persian Pentateuch and Gospels, the Ethiopic Psalms, Song of Solomon, and New Testament, with their respective Latin translations; together with the Latin Vulgate, and a large volume of various readings, to which is ordinarily joined Castel's Heptaglot Lexicon—all included in eight volumes folio.'—*Brown's Dictionary of the Bible.* Biblical scholars are now greatly assisted in their studies by the publication of polyglott editions of the Bible, containing in parallel columns versions in various ancient and modern languages. The Greek word *polyglott* signifies 'many tongues.'

for forty years, though the Geneva Bible was more read in private houses, being printed above twenty times in as many years.'

Various editions of the Bishop's Bible were printed at London in black-letter at the beginning of the seventeenth century; but notwithstanding the care that had been expended on it, the version was not very correct, and its language was often far from elegant. To amend these deficiencies, and to obtain a really excellent version, James I. ordered an entirely new translation, which is that now in common use throughout Great Britain. To effect this very important undertaking, forty-seven distinguished scholars were appointed, and divided into six classes. Ten at Westminster were to translate to the end of 2d Kings; eight at Cambridge were to finish the remaining historical books and the Hagiographa; at Oxford, seven were engaged on the Prophets, eight upon the four Gospels, the Acts of the Apostles, and the Apocalypse: the Apocryphal books were to be translated at Cambridge. Each individual translated all the books allotted to his class; the whole class then compared all the translations, and adopted the readings agreed on by the majority. The book, thus finished, was sent to each of the other classes. Three years were consumed in this arduous duty of translating and examining. Copies were then sent to London, one from each of the above-named places. Here a committee of six, one from each class, reviewed the whole, which was last of all revised by Dr Smith, and Dr Bilson, bishop of Winchester. Having received the approbation of the king, himself no mean scholar, it was printed in 1611. We are not informed by any writer, whether the translation was effected from Hebrew copies of the Old Testament or the Greek Septuagint, or whether any transcriptions of the original manuscripts were consulted;* but it is allowed by all persons competent to judge, that the version possesses extraordinary merit, and is the most perfect ever produced.

CHRISTIANITY—HISTORY OF THE CHURCH.

At the period of Christ's appearance on earth,† the land of Judea had sunk to the condition of a Roman province, and its people, the Jews, were in a condition not only of civil, but great moral degradation. Their religion, as appears from all history, had degenerated from its ancient and lofty character, and existed only as a system of empty external observances, in the hands of a priesthood to the last degree corrupt. The leaders of the people, and the chief priests, according to the account of Josephus, were persons of profligate manners, who had purchased their places by bribes, or by acts of iniquity, and who maintained their authority, in subordination to the Roman civil power, by flagitious crimes. The multitude, affected by the example of their superiors, were not less corrupted in morals; and in a general sense, it may be understood that the entire nation was in a state of lamentable disorder. To aggravate the distractions of the people, they were divided into a variety of sects, who, in proportion as they neglected the essentials of religious faith and practice, occupied themselves in disputes respecting matters of inferior concern. Of these sects, three in a great measure eclipsed the rest, both by the number of their adherents, and also by the weight and authority which they acquired: these were the Pharisees, the Sadducees, and the Essenes. The chief difference of opinion among these leading sects regarded the interpretation to be put on the *words* in the Holy Scriptures; and none of them seemed to have the interests of true piety at heart. The best of the three was the Essenes, who discountenanced ostentation in religious offices, and inclined to lives of secluded meditation. While the Jews, then, were thus broken up into contending sects, and were apparently in a state of profound ignorance of the true principles of religion, Jesus Christ appeared amongst them, to execute his divine mission, which referred not only to them, but the whole human race. In the writings of the Evangelists we are furnished with so remarkably precise an account of the birth and public ministrations of Christ, as also of his death and passion, as to leave nothing to be said here on the subject; and we pass on to an enunciation of the principles which it was the object of his mission to accomplish, and a historical sketch of that universal society of believers, the church, which he empowered to work out his designs.

Supposing Christianity, or the religion of Christ, to be reducible to a single principle, it might be described as a universal truth adapted to all mankind, and of a divine, all-uniting power—a principle of love and universal brotherhood, without respect of nation, age, rank, colour of skin, or any other exterior circumstance; in short, a system of faith and practice for the whole human race. A religion to be so universally applicable should necessarily embrace no tenet or observance which required special localisation. Judaism required a periodic visitation to the Temple at Jerusalem; Mohammedanism requires the performance of pilgrimages to certain cities in Arabia, also attention to forms only suitable to the daily and seasonal influences of a warm climate; Hindooism enjoins constant ablutions in the Ganges, besides other local observances—all which mark these religions as but referable to certain nations and countries, and not compatible with modes of existence in all parts of the earth. Setting aside, for the present, all other considerations, Christianity, by including no obligation which could not be as well performed in one part of the globe as another, or as well in one age as another, is something very different from religions either temporary or local in their character. It is in this universal and eternal applicability, therefore, that we find one of the grandest features of the religion of Christ.

The promulgation of the principle of universal benevolence and love—the antagonism of every evil or violent emotion—was, whatever may be said of it, new to the Jewish people. True, they believed in one God, the Creator of all things, and so far had just views of the Source of religion; they also possessed the commandments of the Mosaic law; but when, on any occasion, did they view the Gentile nations, or foreigners, in any other light than as an inferior race of mankind, to whom their laws and usages had no sort of applicability? Practically, their religion narrowed the affections, while Christianity was all for widening them. 'The Greeks, besides developing the principle of the beautiful in their works of art,' (we quote from the article CHRISTIANITY in the Encyclopædia Americana), 'had laid the foundations of valuable sciences, applicable to the business of life. The Romans had established the principles of law and political administration, and proved their value by experience. These scattered elements of moral and intellectual cultivation, insufficient in their disunited state to bring about the true happiness and moral perfection of man, in his social and individual capacity, were refined, perfected, and combined, by Christianity, through the law of a pure benevolence, the highest aim of which is that of rendering men good and happy, like God, and which finds, in the idea of a kingdom of heaven upon earth, announced and realised by Christ, all the means of executing its design. His religion supplied what was wanting in these nations—a religious character to the science of Greece, moral elevation to the legislative spirit of Rome, liberty and light to the devotion of the Jews; and by inculcating the precept of universal

* The most ancient manuscripts of the Bible, in the original Hebrew, are to be found among the Jews in Spain (or were so some years ago), but none of them is above seven or eight hundred years old: a manuscript in the Bodleian Library at Oxford is thought to be seven hundred years old; in the library of the Vatican at Rome there are manuscripts, we believe, of parts of the Old and New Testament which are of considerable antiquity. The first edition of the entire Hebrew Bible was printed at Soncino in 1488; and the Brescian edition of 1494 was used by Luther in making his German translation.

† The term *Christ* is from the Greek, and signifies 'the Anointed;' *Messiah*, from the Hebrew, has the same meaning.

love of mankind, raised the narrow spirit of patriotism to the extended feeling of general philanthropy. Thus the endeavours of ancient times after moral perfection were directed and concentrated by Christianity, which supplied at the same time a motive for diffusing more widely that light and those advantages which mystery and the spirit of caste had formerly withheld from the multitude. It conveyed the highest ideas, the most important truths and principles, the purest laws of moral life, to all ranks; it proved the possibility of perfect virtue, through the example of its Founder; it laid the foundation for the peace of the world, through the doctrine of the reconciliation of men with God and with each other; and directing their minds and hearts towards Jesus, the Author and Finisher of their faith, the crucified, arisen, and glorified Mediator between heaven and earth, it taught them to discern the benevolent connection of the future life with the present.'

Systems of chronology differ with regard to the year of the crucifixion of the Saviour, some placing it in A.D. 30, and others in A.D. 33. In either case, as is known to the readers of the evangelical history, the apostles and disciples who had followed him while on earth, began, shortly after his departure, those ministrations which they were commissioned to execute by their divine Master, and which had for their object the dissemination of the Gospel in all parts of the world. It will be further recollected, that in consequence of the defection and death of the traitor Judas, the apostles were reduced to eleven in number—Peter, and Andrew his brother; James the son of Zebedee, and John his brother; Philip and Bartholomew; Thomas and Matthew; James the son of Alpheus, and Jude his brother; lastly, Simon the Canaanite. Afterwards, they elected Matthias in place of Judas. The number, however, was again reduced to eleven, by the murder of James, the brother of John, by Herod (A.D. 44).

The first society or church established by the apostles was at Jerusalem; and from all that can be learned, it was on the most simple and unpretending scale, corresponding to the nature of the religion which they professed. One of Christ's most emphatic declarations had been that 'his kingdom was not of this world;' by which he signified that the Christian doctrines and graces referred exclusively to the mental affections, were a business of the heart, not of outward show or demonstration, and had in other respects no alliance with civil dominion. The humble but intrepid apostles, therefore, in the course of their preaching and teaching in Judea, and afterwards in other countries, took no part in any design to subvert temporal governments, or to bring them into contempt; neither did they seek to ally themselves with civil rulers, but confined themselves in all places to their proper functions of calling sinners to be converted to the faith of Jesus, comforting those who mourned, animating the piety of the dejected, and, in particular, assisting the poor and needy. Of the forms of Christian worship in this infant state of the church, little is known; and, indeed, it appears that some time elapsed before the converted, or at least the pupils to the apostolic teachers, forsook the forms enjoined in the old Judaic mode of worship. According to Mosheim, they 'held separate assemblies, in which they were instructed by the apostles and elders, prayed together, celebrated the Holy Supper in remembrance of Christ, of his death and sufferings, and the salvation offered to mankind through him; and at the conclusion of these meetings, they testified their mutual love, partly by their liberality to the poor, and partly by sober and friendly repasts, which thence were called *feasts of charity*. Among the virtues which distinguished the rising church in this its infancy, that of beneficence to the poor and needy shone in the first rank and with the brightest lustre. Having finished their work at Jerusalem, the apostles proceeded to other nations, and travelled over a great part of the known world, in a short time planting a vast number of churches among the Gentiles. Several of these are mentioned in the Sacred Writings, particularly in the *Acts of the Apostles*, though these are undoubtedly but a small part of the churches which were founded, either by the apostles themselves or by their disciples under their immediate direction.'

It is not our design to enter into a formal detail of what constituted the various points of belief and religious practice in this early age of the church. It will be understood that there was at first no body of written evidence answering as a fountain of doctrine and precept, such as we now possess in the collected books of the New Testament; and that apostles, and those who were raised up to assist them in their holy cause, were accordingly thrown much more on their own resources, and more dependent on God's inspiring power to teach and direct, than required to be the case in more advanced times. To use the words of Mosheim—'Among the first professors of Christianity there were but few men of learning; few who had capacity enough to insinuate into the minds of a gross and ignorant multitude the knowledge of divine things. God, therefore, in his infinite wisdom, judged it necessary to raise up, in many churches, extraordinary teachers, who were to discourse in the public assemblies, upon the various points of the Christian doctrine, and to treat with the people, in the name of God, as guided by his direction, and clothed with his authority. Such were the *prophets* of the New Testament.'—(Rom. xiii. 6; 1st Cor. xii. 28; xiv. 3–29; and Eph. iv. 11.)

Much as we desire to do so, it is impossible for us to pass over a circumstance in the history of these early times, which has led to centuries of discord; we allude to the early form of church government. We shall allow a place to Mosheim's explanations on this subject. 'Neither Christ himself, nor his holy apostles, have commanded anything clearly or expressly concerning the external form of the church, and the precise method according to which it should be governed. From this we may infer that the regulation of this was in some measure to be accommodated to the time, and left to the wisdom and prudence of the chief rulers, both of the state and of the church. If, however, it is true that the apostles acted by Divine inspiration, and in conformity with the commands of their blessed Master (and this no Christian can call in question), then it follows that that form of government which the primitive churches borrowed from that of Jerusalem, the first Christian assembly established by the apostles themselves, must be esteemed as of Divine institution. But from this it would be wrong to conclude that such a form is immutable, and ought to be invariably observed; for this a great variety of events may render impossible. In those early times, every Christian Church consisted of the *people*, their *leaders*, and the *ministers*, or *deacons*; and these, indeed, belong essentially to every religious society. The people were undoubtedly the first in authority; for the apostles showed, by their own example, that nothing of moment was to be carried on or determined without the consent of the assembly, and such a method of proceeding was both prudent and necessary in those critical times.

It was therefore the assembly of the people which chose their own rulers and teachers, or received them by a free and authoritative consent, when recommended by others. The same people rejected or confirmed by their suffrages the laws that were proposed by their rulers to the assembly, excommunicated profligate and unworthy members of the church, restored the penitent to their forfeited privileges, passed judgment upon the different subjects of controversy and dissension that arose in their community, examined and decided the disputes which happened between the elders and deacons, and, in a word, exercised all that authority which belongs to such as are invested with the sovereign power. The people, indeed, had in some measure purchased these privileges, by administering to the support of their rulers, ministers, and poor, and by offering large and generous contributions, when the safety or interests of the community rendered such contributions necessary. In these supplies, each one bore a part

proportioned to his circumstances; and the various gifts which were thus brought into the public assemblies were called *oblations*.

The rulers of the church were called either *presbyters* or *bishops*, which two titles are in the New Testament undoubtedly applied to the same order of men. These were persons of eminent gravity, and such as had distinguished themselves by their superior sanctity and merit. Their particular functions were not always the same; for while some of them confined their labours to the instruction of the people, others contributed in different ways to the edification of the church. Hence the distinction between *teaching* and *ruling presbyters* has been adopted by certain learned men. But if ever this distinction existed, which I neither affirm nor deny, it certainly did not continue long; since it is manifest that St Paul requires that all bishops or presbyters be qualified and ready to teach and instruct.

The church was undoubtedly provided from the beginning with inferior ministers or *deacons*. No society can be without its servants, and still less such societies as those of the first Christians were. And it appears not only probable, but evident, that the *young* men, who carried away the dead bodies of Ananias and Sapphira, were the subordinate ministers, or *deacons* of the Church of Jerusalem, who attended the apostles to execute their orders. All the other Christian churches followed the example of that of Jerusalem in whatever related to the choice and office of the deacons.

Such was the constitution of the Christian Church in its infancy, when its assemblies were neither numerous nor splendid. Three or four presbyters, men of remarkable piety and wisdom, ruled these small congregations in perfect harmony, nor did they stand in need of any president or superior to maintain concord and order where no dissensions were known. But the number of the presbyters and deacons increasing with that of the churches, and the sacred work of the ministry growing more painful and weighty by a number of additional duties, these new circumstances required new regulations. It was then judged necessary that one man of distinguished gravity and wisdom should preside in the council of presbyters, in order to distribute among his colleagues their several tasks, and to be a centre of union to the whole society. This person was at first styled the *angel* of the church to which he belonged, but was afterwards distinguished by the name of *bishop*, or inspector; a name borrowed from the Greek language, and expressing the principal part of the episcopal function, which was to inspect and superintend the affairs of the church. It is highly probable that the Church of Jerusalem, grown considerably numerous, and deprived of the ministry of the apostles, who were gone to instruct the other nations, was the first which chose a president or bishop. And it is no less probable that the other churches followed by degrees such a respectable example. . . . A bishop, during the first and second centuries, was a person who had the care of one Christian assembly, which at that time was, generally speaking, small enough to be contained in a private house. In this assembly he acted, not so much with the authority of a *master*, as with the zeal and diligence of a faithful *servant*. He instructed the people, performed the several parts of Divine worship, attended the sick, and inquired into the circumstances and supplies of the poor. He charged, indeed, the presbyters with the performance of those duties and services which the multiplicity of his engagements rendered it impossible for him to fulfil; but had not the power to decide or enact anything without the consent of the presbyters and people. And though the episcopal office was both laborious and singularly dangerous, yet its revenues were extremely small, since the church had no certain income, but depended on the gifts or oblations of the multitude, which were no doubt inconsiderable, and were, moreover, to be divided between the bishops, presbyters, deacons, and poor.

The power and jurisdiction of the bishops were not long confined to these narrow limits, but soon extended themselves, and that by the following means:—The bishops who lived in the cities had, either by their own ministry, or that of their presbyters, erected new churches in the neighbouring towns and villages. These churches, continuing under the inspection and ministry of the bishops by whose labours and counsels they had been engaged to embrace the Gospel, grew imperceptibly into ecclesiastical provinces, which the Greeks afterwards called *dioceses*. But as the bishop of the city could not extend his labours and inspection to all these churches in the country and in the villages, he appointed certain suffragans or deputies to govern and to instruct these new societies; and they were distinguished by the title of *chorepiscopi*—that is, country bishops. This order held the middle rank between bishops and presbyters, being inferior to the former, and superior to the latter.

The churches in those early times were entirely independent; none of them subject to any foreign jurisdiction, but each one governed by its own rulers and its own laws. For though the churches founded by the apostles had this particular deference shown them, that they were consulted in difficult and doubtful cases, yet they had no juridical authority, no sort of supremacy over the others, nor the least right to enact laws for them. Nothing, on the contrary, is more evident than the perfect equality that reigned among the primitive churches; nor does there even appear in this first century the smallest trace of that association of provincial churches from which *councils* and *metropolitans* derive their origin. It was only in the second century that the custom of holding councils commenced in Greece, from whence it soon spread through the other provinces.'

According to these explanations, it would appear that the earliest constitution of the church was exceedingly simple, being in a great measure a confederacy of separate and independent religious instructors; that it gradually assumed the external features of Presbyterianism (equality of rank, but mutual jurisdiction); and that finally, as Christianity spread, and the scattered societies of believers required the supervision and counsel of superiors, there arose a species of Episcopacy, or superintendence by apostolic bishops. According to others, the bishops exercised a superintendence from the first, the earliest being the apostles; and it is reasonable to suppose that some such superior directors, exercising an authority in a spirit of perfect love, must have been necessary for the sake of order and uniformity of doctrine; it is at the same time certain that, whether in the capacity of equals or superiors, the apostles and early bishops performed the office of ordinary teachers of religion. The commissioning of ministers of the gospel by ordination, or the symbol of laying on of hands, appears to have existed from the earliest ages of Christianity. The members of the church at Antioch, founded by Paul and Barnabas, were the first who received the name of *Christians*, having been previously called Nazarenes, by way of derision.

From about the conclusion of the first till the sixth century, there flourished a body of eminent men in connection with the church, whose functions may be said to have generally united those of a professor of divinity and ethics with the pastoral office. These are known in Church History by the title of *Fathers*. They were of two chief classes—Greek and Latin fathers—and were alike distinguished for their erudition. The most celebrated among the Greek fathers was Clement of Alexandria (beginning of the second century), who was the first who philosophised on Christianity; Origen, at one time a pupil of Clement, celebrated for his homilies and writings illustrative of the Scriptures; Eusebius, who wrote the first history of Christianity; Athanasius (296–373), bishop of Alexandria, and a man of invincible courage under persecutions, whose writings exerted a considerable influence on the Christian dogmas; and Chrysostom (344–407), an ascetic, the most admired of the ancient orators. The most distinguished among the Latin fathers were—Tertullian,

born about the middle of the second century, and a writer of great originality; Augustine (354–430), a man of persuasive eloquence, exalted piety, and a warm encourager of the monastic life; Ambrose (340–397), bishop of Milan, an eminent orator, and famed for his mild and humane character; and Jerome (331–420), one of the most learned writers and able expounders of the Scriptures, which, as formerly mentioned, he translated into the Latin tongue.

In the course of the second and third centuries, the history of the church is painfully disfigured by the assumption of dominant powers by bishops; the division of the clergy into subordinate ranks and offices; the increase of ceremonial observances, fasts, and festivals; and, above all, differences of opinion among Christians on matters of belief. One main cause of the variety of opinion might be traced to the collateral influence of the Grecian philosophies, particularly that of Plato. Many converts had been educated in these philosophies, and though Christianised, they still retained the subtle speculative notions implanted in their minds, as well as divers pagan usages. From disputing in the schools of Athens on questions in metaphysics, they betook themselves to controversies on the most abstruse points of theology. From controversy, the disputants naturally subsided into heresy and schism; and hence we find, that while the Christian Church was on all sides struggling against barbarous powers, it was itself torn by intestine division. In this general sketch, we can only mention that the leading sectaries at this period were the Manichæans, Hieracites, Sabellians, and Novatians; and in the fourth century the heresy of Arius broke out, and produced incalculable injury. Prior to this latter event, the external condition of the church underwent an entire change.

For nearly three hundred years after the death of Christ, the church, though gradually altering in internal organisation, doctrinal belief, and ritual observance, was still an independent spiritual community, reposing on the simple but glorious basis on which it had been placed by its Divine Author, and in which condition it may be said to have been invulnerable. The conversion of Constantine the Roman Emperor in 321 (See No. 57), at once altered the primitive state of the church. 'Before that important period, some churches had been liberally supported by the devotion and zeal of wealthy individuals; but yet the situation of the clergy was insecure and contemptible in the eyes of the pagan world. Afterwards they lived in princely splendour, honoured and esteemed as the first rank of men in the empire. Formerly, they had been sunk in the gloom of obscurity, but now they basked in the broad sunshine of honour, wealth, and imperial favour. To a person who contemplates the aspect of the Roman Empire in that age, a new world seems to appear. The system of polytheism and idol worship which, from time immemorial, had, by its pompous ceremonies and splendid festivals, commanded the veneration of mankind, fell into disrepute; and Christianity, which had so long been the object of universal contempt, and frequently of cruel persecution, at last triumphed over all opposition, and became the established religion of the masters of the world. The Roman Empire saw magnificent churches erected for the worship of the crucified God, whose name had been long despised, and the rites of the Christian religion celebrated with a pomp and solemnity equal, if not superior, to what had been displayed in the pagan temples. A total revolution was taking place in the texture of religious opinions and the combinations of human ideas. What a scene would this have appeared to a Christian of the apostolic age, or of that which immediately succeeded it! What would a Christian whose mind had been formed, whose religious ideas had been modelled, by the simple and disinterested maxims of primitive Christianity, think, on seeing the ministers of the humble and lowly Jesus display the magnificence of sovereign princes! And what must have been his reflections on contemplating a system of honour and emolument, set up by the professed followers of one whose whole life was a continued scene of poverty and sufferings, and whose preaching and practice were entirely calculated to inspire all those who embraced his doctrine with a sovereign contempt for the things of this world! In the reign of Constantine the church was enriched; but it evidently appears that the spirit of genuine Christianity was in a great measure extinguished. Ecclesiastical history, which had hitherto exhibited a horrible and sanguinary scene of the sufferings of the church under pagan persecutors, then began to display a not less disgusting view of the persecution of Christians by the hand of Christians, carried on with a cruelty little short, in some instances, of that which pagans had before exercised against them.'*

To extinguish, as far as possible, the heresy of Arius, and allay other causes of schism, Constantine convoked the celebrated Council of Nice (325), which consisted of 318 bishops, and other ecclesiastics, to the number of 2048. After a session of two months, in which the emperor frequently assisted in person, the opinions of Arius, which went to a denial of the divinity of Christ, were condemned, the equality of the three Persons of the Holy and Undivided Trinity was declared the true doctrine, and being comprised in a form of belief called the Nicene Creed, was published as the obligatory and only orthodox creed of the Christian Church.†

The deliberations of the Council of Nice failed in their main design, and the Arians, persecuted by the church, dispersed themselves in distant nations, and there found a safe retreat. This may be viewed as the first great schism in the church, which henceforth consisted, not in one, but in several distinct societies of believers. To trace minutely the progress of the respective branching-off communions, would lead us considerably beyond our limits; let it suffice to say, that in the fourth and fifth centuries there were founded several important Eastern Churches. The Armenian Church dates its commencement from about the year 312. The Egyptian or Coptic Church originated in a heresy in the fourth century; and the Abyssinian Church shortly after branched off from it. The Syrian Church, in a similar manner, gave origin to the Syro-Indian Church, which still exists in Travancore and Cochin, and acknowledges as its head the Patriarch of Antioch. It is likewise to the fourth century that we must trace the origin of that great schism which afterwards divided the church into the Western or Roman Church, and the Eastern or Greek Church. At this period, the bishop of Rome occupied the first rank in the episcopal order, and on that ac-

* Bigland's Letters on History.

† The Nicene Creed, after receiving some subsequent additions, stood as follows, and has for ages occupied a place in the church service:—'I believe in one God, the Father Almighty, Maker of heaven and earth, and of all things visible and invisible; and in one Lord Jesus Christ, the only begotten Son of God, begotten of his Father before all worlds: God of God, Light of Light, Very God of Very God, being of one substance with the Father, by whom all things were made; who for us men, and for our salvation, came down from heaven, and was incarnate by the Holy Ghost of the Virgin Mary, and was made man, and was crucified also for us under Pontius Pilate: He suffered and was buried, and the third day he rose again according to the Scriptures, and ascended into heaven, and sitteth on the right hand of the Father, and he shall come again with glory to judge both the quick and the dead; whose kingdom shall have no end: and I believe in the Holy Ghost, the Lord and Giver of Life, who proceedeth from the Father and the Son, who with the Father and the Son together is worshipped and glorified, who spake by the Prophets; and I believe one Catholic and Apostolic church; I acknowledge one baptism for the remission of sins; and I look for the resurrection of the dead, and the life of the world to come. Amen.'

With respect to the form of belief usually called the Apostles' Creed, it is believed to be of much less antiquity than the apostolic age, but there is great obscurity as to its authorship. It also has undergone alterations in the course of time. 'The third creed, erroneously ascribed to Athanasius (who assisted at the Council of Nice in 325), is affirmed to have been privately drawn up about the middle of the fourth century; and is rejected by all the Protestant churches except the Anglican.'—*Josiah Conder's View of all Religions.*

count exerted a certain authority over all other bishops within the pale of the orthodox church. 'Constantine, by removing the seat of empire to Byzantium (Constantinople), raised up in the bishop of this new metropolis a formidable rival to the Roman pontiff. Accordingly, in a council held at Constantinople, in the year 381, by the authority of Theodosius the Great, the bishop of that city was, during the absence of the bishop of Alexandria, and against the consent of the Roman prelate, placed in the first rank after the bishop of Rome, and consequently above those of Alexandria and Antioch.'—(*Mosheim*). The rivalry and contentions of the bishops of Rome and Constantinople which ensued from this period, terminated in 1054 in a complete rupture. Each power excommunicated the other, and henceforth the Greek Church was entirely under the authority of the Patriarch of Constantinople. The other branch of the church remained under the dominion of the Roman pontiff, and is that which is known by the name of the Roman Catholic Church.

Centuries before this latter event, the church, under the generally recognised supremacy of the bishop of Rome, had undergone the most extraordinary changes of condition. The legal establishment of Christianity as the religion of the state, and its consequent alliance with civil power, gave it a new character. That this authoritative recognition greatly aided in converting the pagan world, there can be no manner of doubt; but unfortunately, as we have seen, the wealth and authority conferred on churchmen naturally introduced evils gross in their nature; and in many respects the alliance with the civil government did infinitely more harm than good. Some writers aver that Christianity could scarcely have survived the dismemberment of the Roman Empire and the barbarism that ensued throughout the middle ages, unless fortified by civil power; but this, we humbly submit, is but a timid view of the Christian dispensation, which surely required no such extraneous means of support. It is a lamentable truth, confirmed by every respectable historian, that the proceedings of Constantine (321), and afterwards of Theodosius (390), in establishing Christianity as the religion of the empire, laid the foundation of every species of ecclesiastical abuse, and directly caused the decay of that sublime but simple piety which was the ornament of the apostolic times. It is to the arrangements consequent on the alliance of the church with the civil power, that we have also to trace the origin of that new feature in ecclesiastical polity—the endowment of churches, cathedrals, abbeys, monasteries, and other institutions, with the functionaries belonging to them. But the most extraordinary change, both in the internal and external character of the church, was the excess of power which, by the sanction of temporal princes, was accorded to the bishops of Rome. From early times, the occupant of the Roman primacy had been known under the title of *papas*, a Greek word signifying father, and hence the well-known terms *papal* and *pope*. The pope, aided by his council, formed the head of the hierarchy, and acted as a supreme magistrate in all religious matters whatsoever. From the possession of the spiritual supremacy, a plea was easily found to assume the right of interfering in temporal concerns; and, as is known to the readers of history, the pope was allowed to exercise an almost unquestioned authority over the affairs of Christian princes for several centuries. It is at the same time proper to remark that the lay and clerical members of the church did not always agree in conceding this excessive power to the popes; the right of spiritual jurisdiction was not denied; but how far, and in what manner, that of a temporal nature, without the express sanction of general councils, should be allowed, formed a point of frequent debate, and we do not know that Catholics have yet arrived at a uniformity of opinion on the subject.

Another serious abuse which crept into the ecclesiastical affairs of the church, was the establishment of monastic institutions—houses in which men secluded themselves from the world, and engaged themselves in religious offices. The practice of living as hermits, for the purpose of religious meditation, existed before Christianity, and was only engrafted upon it (in a regular manner) about the beginning of the fourth century; and in the course of the following hundred years, monasteries greatly increased in number. In the sixth century, the practice of taking vows of celibacy and rigid adherence to certain rules, was introduced by St Benedict; from which period till the tenth century, monasteries are generally allowed to have been dwellings of piety, temperance, and the refuge of learning, driven to them for shelter from the troubles of the times. In the course of the tenth and eleventh centuries, the monasteries lost this valuable character. Idleness and luxury entered their walls, together with the vices of the world; their superiors, named abbots or priors, appointed by lay princes from among the nobility, set themselves above the jurisdiction of the bishops; and in short, the whole monastic system, including convents for female devotees (nuns), became altogether corrupt. None of the religious orders rose to such eminence and power as the Society of Jesus, or Jesuits, founded by Ignatius Loyola (1491–1556), a Spaniard, and a man of great shrewdness and enthusiasm. The society was sanctioned by a bull (or ordinance) of Paul III. in 1560. Young men of ability and peculiar energy of character were alone admitted, and the trials of the novices were most severe. In addition to the usual vows of poverty, chastity, and implicit obedience to superiors, the members were bound to go, unhesitatingly, and without recompense, whithersoever the pope should send them, as missionaries for the conversion of pagans and heretics, or for the service of the church in any other way. This well-trained and formidable corps of spiritual combatants long exerted a powerful influence throughout Christendom, as well as in heathen countries; but as general intelligence advanced, they failed in their efforts; in 1773 their order was abolished by Clement XIV.; and latterly (though restored in 1814) they sunk into comparative obscurity.

The many flagrant corruptions of the church began to excite the attention of reflecting men in the fourteenth century, and efforts were on divers occasions made by them to produce a reform, but without success. The abuses chiefly complained of were the scandalous lives of many of the clergy, particularly of the monastic and mendicant orders, the gross superstitious reverence generally paid to relics, the extravagant power of the pope, and the sale of indulgences. The exhibition of religious relics, with the view of exciting the piety of believers, had degenerated into a system of pure imposture. 'The poor fragments of mortality—a skull, a bone, or the fragment of a bone, a tooth, or a tongue—were either mounted or set, according to the size, in gold and silver, deposited in costliest shrines of the finest workmanship, and enriched with the most precious gems. Churches soon began to vie with each other in the number and variety of these imaginary treasures, which were sources of real wealth to their possessors. The instruments of our Lord's crucifixion were shown (the spear and the cross having, so it was pretended, been miraculously discovered), the clothes wherein he was wrapt in infancy, the manger in which he was laid, the vessels in which he converted water into wine at the marriage feast, the bread which he broke at the Last Supper, his vesture for which the soldiers cast lots. Such was the impudence of Romish fraud, that portions were produced of the burning bush, of the manna which fell in the wilderness, of Moses's rod and Samson's honeycomb, of Tobit's fish, of the blessed Virgin's milk, and of our Saviour's blood!'—(*Southey*).

The ludicrous extent to which the exhibition of relics was carried, and also the abstract claims of spiritual supremacy by the pope, might have been tolerated for some time longer; but the plenary power of selling immunities for transgressions roused the common sense of mankind. Leo X., famous for his love of splendour, commenced this odious traffic. Martin Luther (1483–1546), a monk of the order of Augustine in Germany, was

shocked with the effects of the system, as they appeared in his congregation at Wittemberg. 'By far the most notable vender of indulgences,' says D'Aubigné, 'was Tetzel, a Dominican, whose morals were on a par with his impudence. This man had popular talents: he was a ready, sonorous preacher; he was intimately acquainted with the human heart; and these advantages, joined to his dignity as prior of his order, pointed him out as the fittest person to sell these indulgences. He was accordingly made chief commissioner, and his success at the different towns he visited was prodigious. From the pulpit he declared indulgences to be the most sublime of God's favours; they had saved more souls than the efforts of all the apostles; they would atone for every sin, however heinous; they were effectual in regard to future, no less than past transgressions; they atoned for the dead no less than the living; and whoever suffered his relatives to remain in purgatory, when a little money would release them, was guilty of the worst crime. Hence a blow was struck at all repentance: contrition of heart was out of the question, when pardon could be obtained on terms so much easier. The present recital would perhaps be disbelieved, if its truth were not virtually admitted by contemporary Roman Catholics. But good is often educed from evil; and this preaching of indulgences was one of the chief causes of the Reformation. There is reason to believe that the whole system struck Luther with horror from the very first; and that, coupled with the impiety which he had witnessed in the capital of Christendom, it provoked his doubts as to the infallibility of the papal authority. The effects of the indulgences were every day before his eyes; and as one of the authorised confessors of the people of Wittemberg, he perceived them more clearly than other men. While seated in the tribunal of penance, he was amazed to hear what crimes had been committed, and still more, that no contrition was felt for them. He refused to absolve, unless the criminals forsook their evil ways. They showed him their letters of impunity: no matter; he estimated these at their just value—namely, as so many pieces of waste paper. Being dismissed without absolution, and without admission to the sacraments, the deluded purchasers complained to Tetzel, who bellowed and threatened; but Luther was undaunted: he openly preached against the pernicious traffic; he attacked the very foundation on which it rested; he denied the power of pope or church to remit the guilt of sin; and by his famous propositions, as everybody knows, rapidly produced the most gigantic change effected in this world since the origin of Christianity.'

The preaching of Luther, in exposing the error of indulgences, and calling in question various traditional tenets and practices, speedily roused a large part of Germany; and as no symptom of relenting was shown on the part of those in power, an extensive secession from the Romish Church became unavoidable. The year 1521 is to be regarded as the epoch of the Reformation in Germany; and from this period it became a political as well as religious movement—in a word, a movement in favour of civil and religious freedom. In consequence of a general *protest* being signed by the reforming party against a decree of the Diet of Spires in 1529, they received in 1541 the name of *Protestants*. Eleven years earlier, in 1530, a declaration of the principles of the reformers, drawn up by Melancthon, was presented to the emperor of Germany at a diet held at Augsburg, and there solemnly read before the assembly: this famous declaration is known in history as the Confession of Augsburg. The Reformation spread from country to country with singular rapidity: the ancient church was deposed, and one of a reformed character established in its place—in Switzerland and Geneva in 1535; in Sweden and Denmark in 1536; in England in 1547; and in Scotland in 1560. In Austria, Italy, Spain, Portugal, and France, the efforts of the reformers were less successful, and in these countries the Roman Catholic Church has been established, or at least popular, till the present day.

CONCLUDING SUMMARY.

Christianity now exists, in one or other of its various forms, in all civilised countries, and numbers, as is believed, 261,000,000, out of 900,000,000, the entire population of the globe. Although originating in Asia, and flourishing for some time in the adjacent regions of northern Africa (Church of Alexandria, for example), it prevails only to a small extent in these continents, and is principally confined to Europe and the countries which have been peopled by European emigrants. Everywhere it is the religion of *civilised man*, no other creed or form of belief being at all suitable to an advanced intelligence, or so directly calculated to inspire sentiments of refined piety, humanity, and justice. In the hands of uninstructed, ambitious, and intolerant men, its history abounds in the most odious crimes; but latterly, as its professors have fallen under the influence of a civilisation to which it has itself largely contributed, and as the true principles of the Gospel have been better understood, our religion has not been outraged by indecent excesses either at home or abroad; while, by the earnest but unostentatious efforts of its supporters, of various denominations, it has been made favourably known in the most remote parts of the earth.

The forms in which Christianity is professed are very numerous, but the whole are comprehended in three leading systems—the Roman Catholic Church, the Eastern Churches, and the Protestant or Reformed Churches.* With but one exception, all acknowledge

* *Roman Catholic Church.*—The doctrines and ritual of this body, as now professed, proximately rest in a great measure on the decisions of the Council of Trent (terminated 1563). According to these decisions, the Romish creed embraces the following points:—An admission of apostolical and ecclesiastical traditions; that the Holy Scriptures form only a part of revelation, and are to be interpreted only according to the sense in which they are held by the church; that there are seven sacraments necessary for the salvation of mankind, though not for every one—baptism, confirmation, eucharist, penance, extreme unction, clerical orders, and matrimony; that in the mass there is offered a true, proper, and propitiatory sacrifice for the living and the dead; and that in the holy sacrament of the eucharist, there is really, truly, and substantially, the body and the blood, together with the soul and divinity, of Christ (transubstantiation); that there is a place of purgation, or purgatory, into which souls proceed after death; that the saints, reigning together with Christ, are to be honoured and invoked; that they offer prayers to God for us, and that their relics are to be had in veneration; that the images of Christ, of the Virgin Mary, and also of the other saints, ought to be had and retained, and that due honour and veneration are to be given to them; that the power of indulgences was left by Christ to the church, and that the use of them is most wholesome to the Christian people; that the Holy Catholic Apostolic Church is the mother of all churches, and that out of the Catholic faith none can be saved. To these principal matters of belief are added—the efficacy of prayers for the dead; auricular confession; celibacy of the clergy; the use of Latin in the public ministrations; signing with the cross; the rosary as an implement of devotion, &c.

The Roman Catholic Church is an episcopacy, or government by a hierarchy of bishops. The supreme control rests in the pope and his council at Rome, and thence radiates a system of management, most complete and effective, over all parts of Christendom. The church includes three distinct orders of clergy—bishops, priests, and deacons; all others—such as cardinals (popes expectant), archbishops, deans, vicars, &c.—belonging to one or other of these classes. The church claims the mark of true *apostolicity*—that is, an unbroken line of descent from the apostles and their Divine Master. The ordination of priests is the engrafting of them into this apostolic line of succession. Bishops alone ordain or communicate holy orders. In no church is the ritual of public worship so highly adorned, or rendered more imposing, by the dresses of the officiating priests, the waving of censers, crucifixes, pictures, images, and music. Although celebrated in an unknown tongue, it is observable that the public worship excites the greatest appearance of attention and decorum, as well as all the outward demonstrations of piety. The influencing of the devotional feelings is said to be the object aimed at by the various outward insignia; the church (if we understand the argument) holding it to be of equal consequence whether the heart is touched, and feelings of piety and venera-

the doctrine of the Trinity, the fall of man, salvation by the expiatory death of Christ, the resurrection, and a state of final rewards and punishments. Differences on other matters may be traced to two distinct causes of controversy.—1. Whether the rule of faith and practice is absolutely confined to the Holy Scriptures, or embraces a traditional revelation, sanctioned by councils, and cherished by the church? 2. And who has the right to interpret the rule of faith—the church or individuals? On the exact determination of these points rests a complex series of divisions, which at present appear to be as far from settlement to the mutual satisfaction of parties, as they were in the sixteenth century; and we may rationally conclude that, humanly speaking, little or no advance to reconciliation can be effected till education has dispelled the mists of prejudice, and enabled men to perceive and judge of abstract matters more equably.

tion are excited, by the exhibition of a crucifix, or the preaching of a sermon. The Roman Catholic Church, though now only a remnant of its former self, is still the most numerous of the various Christian bodies: it includes within its pale France, Belgium, Poland, Italy, the Mediterranean islands, Spain, Portugal, the greater part of the people of Austria and Ireland; about a half of the Prussians and Swiss, and the inhabitants of various German states; large numbers in the South American states and Mexico; also a part of the population of the United States, and nearly all the Lower Canadians; and a considerable number of the inhabitants of England and Scotland, besides those of inferior countries. Altogether, the number of Roman Catholics is said to amount to 138,000,000.

The *Eastern Church* is divided into four leading communions, and several of a subordinate rank:—1. The Constantinopolitan or Orthodox Greek Church, comprising all who acknowledge the supremacy of the Patriarch of Constantinople. 2. The Russian Greek Church, which prevails over Russia, and in virtue of an ordinance of Peter the Great, in 1700, was constituted the national church, having for its head the Russian emperor; it is governed by a council at St Petersburg. 3. The Anti-Byzantine or Monophysite Churches, which have renounced communion both with the Constantinopolitan Church and Church of Rome, and differ from both in doctrine and ritual: these churches include the Syrian, Coptic, Abyssinian, Nestorian, Indo-Syrian, and Armenian Christians. 4. The Greek and other Eastern churches, including the Maronites in Syria, who are in communion with the Church of Rome. The whole of these Eastern churches are said to include 62,000,000 of members. Whatever be their peculiar differences, all recognise two sources of doctrine, the Holy Scriptures and Tradition, and are hierarchical episcopates in their form of government. The church service is in Greek. 'The rites and ceremonies of the Greek Church are exceedingly numerous, trivial, and burdensome. In all the services except the communion, prayers and adorations are offered to the Virgin (styled the *Panagia*, all-holy), or to some of the multitudinous saints of the Greek calendar, almost as often as to the Deity. Every day in the year is consecrated to some saint, frequently to more than one; and every day of the week is appropriated in the church service to some peculiar object of adoration.'—*Conder*. This church does not resist the circulation of the Scriptures, and its clergy may be married men.

The *Protestant Churches* are either those which split off from the Church of Rome at the Reformation, or others which have since sprung from the reformed bodies. Protestantism owns two fundamental principles—that the Bible contains the sole rule of faith, and that it is the right of every one, without respect of person, to judge of that rule with all the aids which Divine grace, reason, and conscience, can inspire. At the same time, it may be noticed that generally in practice each church possesses certain standards of belief to which it is expected its members will adhere. Rejecting traditional revelation, and the decrees of all councils but those of an early date, Protestants admit only two sacraments—baptism and the Lord's Supper. They reject transubstantiation and the sacrifice of the mass; deny the lawfulness of monastic vows, the holiness of celibacy, the merit of good works, the virtue of indulgences, the invocation of saints; reject the worship of images, auricular confession, extreme unction, purgatory, prayers for the dead, and the spiritual authority of the pope. Protestantism exists in three main divisions—Lutherans, Armenians, and Calvinists—each differing from the others in certain points of faith and church government; but there are, besides, innumerable sects which cannot be included in these bodies—as, for example, Quakers, or the Society of Friends, who reject the lawfulness of clerical functionaries, and disapprove of the sacraments and all ordinary forms of public worship—Baptists, a numerous body, with recognised pastors, who possess a very simple form of church government, repudiate infant baptism, and maintain the necessity of the baptism or immersion of adult believers—Moravians, a large and unobtrusive body, who, among other good qualities, display extraordinary ardour in the prosecution of missionary labours—Methodists, a numerous body in England, chiefly distinguished for their devotional fervour, the reformation of manners, and the instruction of the young in religious duties by means of Sunday schools—and Unitarians, an intelligent and respectable body, but differing widely in doctrine from all other classes of Christians; who maintain, as their name imports, the absolute unity of God, in opposition to the doctrine of the Trinity, acknowledge no fixed creed or standard of faith except the Bible, and reject the doctrines of original sin, the vicarious sacrifice of Christ, and the eternity of future punishments. The total number of Protestants, of all churches and sects, is believed to be about 61,000,000.

Protestantism is professed in two chief forms—*Episcopacy*, or the government of the church by bishops, whose spiritual authority is derived from the apostles through the efficacy of ordination, both before and since the Reformation; and *Presbytery*, which rejects a hierarchy of bishops, and admits only the government of the church by a body of ministers all equal in rank. The body called *Independents*, or Congregationalists, only admit of each church being governed by its own members, on a primitive and simple model. At the head of the Protestant Episcopal churches may be placed the Church of England, whose doctrines are contained in the well-known Thirty-Nine Articles and in the Book of Common Prayer. The Church of England has for its basis a denial of the supremacy of the bishop of Rome, and rejects the doctrine of purgatory, the doctrines concerning indulgences and pardons, the worship or veneration of images and relics, the invocation of saints, the sacraments of confirmation, penance, orders, matrimony, and extreme unction, transubstantiation, and the sacrifice of the mass. It retains confirmation as a religious ceremonial, ordination to the priestly office, the sign of the cross in baptism, burial service, kneeling at the communion, absolution of the sick, the whole hierarchical routine of officials—bishops, priests, deacons, prebends, archdeacons, rectors, vicars, &c., and numerous fasts and festivals. In its calendar (see No. 78), affixed to the Book of Common Prayer, there are retained the names of about seventy saints of the middle ages, such as Hilary, Prisca, Valentine, Dunstan, &c. Practically, the church pays no attention to these, or to most of the authorised fasts, festivals, vigils, &c. According to law, the reigning sovereign, whether a king or queen, is head of the church, and has the appointment of its bishops, who hold the dignity of spiritual peers, and are members of the legislature. From its strict connection with the state, the Church of England labours under the misfortune of possessing no power in itself to amend its formularies, which consequently remain what they were in the reign of Edward VI.; yet this great disadvantage is felt to be comparatively unimportant, on account of the extraordinary beauty and simplicity of the language of the prayers and litanies, as well as the elementary nature of the whole service, which admits of no alteration by officiating ministers. [The Book of Common Prayer was prepared by order of Edward VI., who issued a commission, consisting of thirteen English divines, with Archbishop Cranmer at their head. The commission met at Windsor, May 1548, and drew up a Book of Common Prayer, which was approved by convocation, and finally ratified by an act of parliament in the January following. This book, which is substantially the same as our present Common Prayer Book, was enjoined to be used for all divine offices, from the Feast of Whitsunday 1549.] Both in the United States of America and in Scotland, there are Episcopal communions deriving ordination from the Church of England, and having the same form of worship.

Presbyterianism is established in Scotland, Holland, and some of the Swiss cantons, and exists to a large extent in North America. Presbyterians generally follow the doctrines of John Calvin, rejecting the use of crucifixes, the sign of the cross, altars, liturgies, &c. and recognising no saints' days. Christmas and Easter are recognised by Presbyterians in Holland, but not by those in Scotland. The clergy, being equal in rank, are governed by provincial and general courts, constituted from their own body. Scotland possesses a numerous body of Presbyterian dissenters or seceders from the establishment; and latterly, these have added to former causes of difference, by declaring their hostility to all connection between Church and State; and that Christianity, as was the case prior to the era of Constantine, should be entirely independent of civil government, and its ministers supported exclusively by voluntary contributions.

PAGAN AND MOHAMMEDAN RELIGIONS.

RELIGION is a general habit of reverence towards Deity, whereby we are inclined to worship and serve Him, so as to procure His favour and blessing. In this sense, the term applies to all forms of belief—to an ignorant trust in imaginary deities, as well as to a knowledge of the true Creator and Preserver. The word religion is from the Latin, and means literally to *bind again;* that is, to present a new and sufficient reason for virtue, and the hope of a state of blessedness after death.

PAGANISM.

Paganism is a term of wide import, and includes a belief in heathen deities, as well as the practice of the wildest superstitions. The whole of the ancient world, excepting the Jews, were pagans, and under various symbols worshipped imaginary deities. (See HISTORY OF ANCIENT NATIONS, and also the succeeding sheet on SUPERSTITIONS in general.) We shall notice here some of the principal forms of paganism:—

FETISHISM.

Fetish is a word which is believed to be derived from the Portuguese language, and signifies any object in nature or art to which a superstitious reverence is attached. Fetishism is the lowest existing form of paganism. It is universal, one kind or other, throughout various countries in Asia, Africa, and also islands in the Pacific and Southern Oceans. It is the religion of ignorant man, groping for deity, seeking for something which he can venerate and fear. In Southern Africa every tribe has its own variety of fetishes. In Whiddah, a small insect called the creeping leaf is highly honoured. Some species of serpents also are worshipped in temples by priests set apart for the purpose. In Benin, fetishes are more numerous, and, in part, of an entirely different description. The whole material universe is believed to be animated and furnished with spiritual powers: water, land, animals, stones, trees, and vegetables of every description, are all full of divine spirits and secret influences. He who makes any eatable article his fetish, touches nothing of that sort whatever, whilst he consumes, without the slightest hesitation, what others consider holy. There is a depth and mystery in this superstition which cannot be very clearly understood. As far as can be reasonably conjectured, this species of fetishism implies a connection between the visible and invisible, and that everything may by certain means be made to have a relation to man and his destiny. The quality of the thing arbitrarily set apart and invested with an attribute of divinity is of no consequence: it may be a piece of bone, rag, egg-shell, or clay, indeed no matter what; there must merely be a belief of a relation subsisting between it and man, which relation often commences only for the first time when the thing is consecrated; in a word, everything properly consecrated and revered as the residence or tangible investiture of deity, is supposed to have a divine power, which, when evoked, is able to incline the Deity to comply with the wishes of men. Under different names, this superstitious reverence for visible objects has prevailed in nearly all ages and countries. The Lacedæmonians had a sacred stone, which, at the sound of a trumpet, is said to have raised itself to the surface of the water from the bottom of the Eurotas. The ancient Germans and Gauls had also their holy rocks, caves, seas, springs, and trees, which afforded miraculous aid, and delivered oracles. In Iceland there was a stone in which a divine spirit was supposed to reside, and was therefore an object of religious worship. The Laplanders had a sacred mountain and a consulting drum. All these superstitions are as absurd and irrational as the fetishism of the Negroes; they are, indeed, prompted by the same hopes, fears, and feelings.

According to the visionary ideas of some ancient sages, a divinity was supposed to reside in matter, and to be liable to be roused from its latent state into activity by means of consecration and the performance of solemn mysteries. In some of the islands of the Pacific, if any person wishes to protect his property, such as a house, field, or place of sepulture, from robbery or intrusion, he declares that it is *tabooed*, or placed under the guardianship of his gods; and the belief that such is the case being universal, the property is safe from aggression. Mr Ellis, in his 'Missionary Tour through Hawai,' mentions some interesting particulars regarding the superstitious delusions of the natives, which incline us to think that these remotely-situated people must have had some early connection with the ancient natives of Asia and Africa, from whom the Greeks and Romans imported their learning and mythological observances. These Hawains, as we are told, previous to their embracing Christianity, believed in a number of ideal gods, who were ministered to by priests, and were propitiated by sacrifices of animals: in making these sacrifices, the diviners observed 'the manner in which the victims expired, the appearance of the entrails, and other signs. Sometimes, when the animal was slain, they embowelled it, took out the spleen, and holding it in their hands, offered their prayers. If they did not receive any answer, war was deferred. They also slept in the temple where the gods were kept; and after the war-god had revealed his will by a vision or dream, or some other supernatural means, they communicated it to the king and warriors, and war was either determined or relinquished accordingly.' The images of the gods who constituted the guardians of the tabooed places of sepulture are described as figures oddly carved in pieces of wood; these were stuck on the fences and trees of the enclosure, and with their horrid aspect and ragged garments, seemed no improper emblems of the system they were designed to support. Adjoining the sacred enclosure the author was shown a *Pahu Tabu*, or City of Refuge, which was open for the reception and security of all classes of delinquents, and resembling in its regulations the sanctuaries of antiquity. These, and some other circumstances mentioned by Mr Ellis, open an interesting field for speculation on the probable connection of ancient and modern superstitions, or at least on the similarity of the delusions by which the untutored human being has in all ages been affected.

It is gratifying to think that these absurd superstitions have in many of the Pacific islands, by the philanthropic exertions of Christian missionaries, been entirely rooted out; and that from other quarters of the globe the most cheering intelligence continues to be received that the reign of idolatry is on the decline, and that there are good hopes of its speedily being overthrown by the diffusion of the mild and elevating doctrines of a purer faith. From various parts of Africa we learn that Christianity is making encouraging progress, and has already been instrumental in emancipating many of the natives from the influence of fetishism and other degrading superstitions. In the interior of that continent, as we learn from recent travellers, fetishism exists to a lamentable extent; and so long as Africa continues to furnish the Christian world with slaves, we may rest assured that this system remains in vigorous exercise.

Fetishism has long been practised among the Negroes of the West Indies under the name of *Obeah* or *Obi*—a term most likely originating in Egypt and the adjacent

parts of Africa, where anciently there was a deity of a demoniacal character, with the name Ob or Oub, and from which Moses commanded the Israelites to abstain from making inquiries. Obi is therefore one of the exploded oracles of the ancient world, which has been carried by captured Negroes to the West Indies, and there set up as an oracle and the patron of incantations, charms, and all other superstitious delusions. The adepts who practise this kind of fetishism are called Obeah-men, or Obeah-women, for both sexes engage in the mysteries of this species of jugglery and imposture. We believe that since the abolition of slavery in the West Indies, and the spread of education and Christianity, the practice of Obi has gone out of repute and notice.

At one period the religion of the Parsees or Fire-worshippers existed throughout Persia and other parts of Asia, but is now confined chiefly to the deserts of Caramania, towards the Persian Gulf, where it is followed by the Guebres or Giaours (infidels), as they are called by the Mohammedans. The great prophet or improver of the Parsee religion was Zoroaster, who flourished about two thousand years ago, and taught the doctrines of there being an eternal spirit of Good or Light (Ormuzd), and an eternal spirit of Evil or Darkness (Ahriman), with a vast number of inferior good and bad genii. In this there was a glimmering of a pure theism; but besides a variety of absurd imaginations respecting the organization of nature, the belief in one God was obscured by a typical worship of the sun, and of fire, both being supposed emanations, or at least emblems, of the spirit of Good and Light. Fire-worship, as practised by the Persian magi, disappeared before the spread of Christianity and Mohammedanism, and, as we have said, exists chiefly among the Guebres, a detached remnant of the old Persian nation.

HINDOOISM.

Hindooism or Brahminism is the religion professed by a majority of the inhabitants of Hindoostan; and while possessing the force of great antiquity, it is supported by a skilful priesthood and the division into castes, rendering it the most ineradicable of any system of false belief which exists (See EAST INDIES, No. 67).

The Hindoos recognize the existence of a supreme and invisible Ruler of the universe, entitled Brahma, but at the same time believe in the existence of other two deities, one of whom is Vishnu the Preserver, and the other Siva the Destroyer. Previous to the creation, Brahma is said to have reposed in silence and self-absorption—a mode of existence considered by the Hindoos as the most perfect and godlike. Having a desire to draw out of his own divine essence a glorious creation, to supplant the deep primeval gloom, he by a thought created the water, and deposited therein a golden egg, blazing like ten thousand suns, which remained inactive for millions of years, till Brahma, who lay enclosed in this shining receptacle, by the energy of his own thought, split it asunder, and sprang forth the Divine Self-Existing, famed in all worlds as the creator of rational beings and the forefather of all spirits. Brahma is represented as a golden-coloured figure, with four heads and four arms; but although he gives name to the great caste of the Brahmins or priests, no sects derive their distinctive appellation from him. He attracts little attention or worship, and he has neither temples erected, nor sacrifices offered to him, nor festivals celebrated in his honour.

Vishnu makes a very conspicuous figure in the sacred annals of India, and the fundamental idea of the Hindoo religion, that of metamorphoses or transformations, is exemplified in the *avatars*, or appearances upon earth of this deity. In his character of preserver, or rather deliverer, he has, say the Vedas, interposed whenever any great calamity threatened the world: and thus the great ends of his providence are brought about by the various incarnations of the Hindoo deity. Of these transformations there are ten, and they fill up the Indian *yugs*, which compose a certain series of periods intended to effect a junction with God, and comprising 4,320,000 years. The yugs have been considered as an allegorical description of the year, divided by the solstices and equinoxes, and of the precession of the equinoxes. Nine avatars have already taken place, and the tenth is yet to come.

It is unnecessary to dwell at any length on the wonderful and ridiculous avatars of Vishnu. He first appeared in the character of a fish, for the purpose of recovering the sacred writings given by Brahma, which had been swallowed by a giant (typical of the rebellious human soul), and buried along with himself in the depths of the ocean. He successively appeared as a tortoise, a boar, a man-lion, what is called the Brahmen or lingam dwarf, and so on. The transformations are of the most ridiculous nature; and were we to recite them, they should only excite pity for the ignorance of the wretched believers in such absurdities.

In his subsequent avatars, under different forms, Vishnu delivered the world from successive monsters and giants which threatened its tranquillity. In the ninth avatar, which is supposed to have taken place in the year 1014 before the Christian era, Vishnu assumed the form of Boodh, the author of a rival creed distinct from that of Brahma. It appears pretty evident that Boodhism at one time very extensively prevailed throughout India; and several great dynasties, particularly that of Magadha, were Boodhist. But a war having taken place between the devotees of Brahma and those of Boodh, the latter were worsted, and dispersed throughout the countries to the east and north of Hindoostan, and Boodhism is no longer professed in India. The rival systems will be noticed after we have described the other deities, male and female. In the tenth avatar, Vishnu will descend to the earth mounted on a white horse, and armed with a scimitar blazing like a comet, to root out evil from the earth, and eternally to punish the wicked. Vishnu is represented of a black or blue colour, with four arms, and a club to exercise chastisement on the wicked. The emblems under which he is represented refer to his vindictive character. He has three eyes, to denote the three great divisions of time—past, present, and future. A crescent in his forehead refers to the measuring of time by the lunar revolutions, as a serpent denotes it by years; and the necklace of skulls which he wears, the extinction of mankind in successive generations.

The third member of the Hindoo triad is Siva the Destroyer. It may be here remarked that the distinguishing appellations applied to these deities are not altogether characteristic of their functions—Vishnu the Preserver frequently employing himself in acts of destruction, and Siva, on the other hand, in acts of beneficence. But much vagueness, inaccuracy, and confusion prevail throughout the whole of the Hindoo creed; and this no doubt arises from the love of the marvellous and indescribable, by which they are led to grasp at phantoms of thought as undefinable as they are impalpable. Siva, it appears, has had an equal share of personal adventure with Vishnu, although the characters which he assumed were not so various, nor his exploits so important or striking. His female partner is called Doorga, and to her the appellation of destroyer is more applicable than to him. She is the chief amongst the female deities; in short, the most formidable and warlike personage of the Hindoo pantheon. She has rivalled Vishnu in the number of forms which she has assumed, and the conflicts in which she has borne the most conspicuous part; and the giants and others who have fallen victims to the prowess of her arm, occupy a prominent place in the wild records of Hindoo mythology. As an object of adoration, the appearance which she is made to assume shows a remarkable obliquity of moral vision in those who framed at first, and those who worship still, this horrible personage. Under the name of Kalee, she is black, with four arms, wearing two dead bodies as earrings, a necklace of skulls, and the hands of several slaughtered giants circling her waist like a zone. Her eyebrows stream with blood; and not content, as the

male divinities generally are, with the simple productions of nature, her altars are made to flow with the blood of animal oblations. Old records even give directions how human sacrifices are to be offered to this cruel goddess. India has no deity more popular, not only amongst banditti, who hold her in especial veneration, but with the more reputable classes of the community, who offer lavish gifts on her shrine. The disgrace of her religion consists in the worship of impure imagery, which it is impossible to mention.

It is unnecessary to enumerate even the more important of the minor deities; as for the whole, they are altogether innumerable. Some have taken the trouble to reckon up three hundred and thirty millions of them. There are gods of the elements, of war, of the sun, of the winds, of fire, of water, and so on. Every river, fountain, and stream, is either a deity itself, or has one presiding over it. The worship or deification of the Ganges forms a distinguishing element in the belief of the Hindoos. Into this large river all who dwell within a certain distance of its banks crowd morning and evening to bathe; and the water of this sacred stream is carried to all parts of India, and is sworn by in courts of justice. At Allahabad, where the streams of the Ganges and Jumna unite, the country for many miles round is considered sacred ground; and so great is the number of pilgrims who resort thither for bathing, that the vizier has received in one year half a lack of rupees for permission to enjoy the benefit of immersion in the sacred flood. Oftentimes may be witnessed children hurrying their parents to the river side, fearful lest they should die before being able to reach its banks. Nothing can be more distressing to the feelings than to behold these poor expiring creatures, some calling upon Rham, some upon one of their false gods, others upon another, with their bodies half in the water and half out, the rising tide soon to overwhelm them. Many are stretched out where the tide cannot reach them, and their case is more pitiable still. Beneath a burning sun, they are left without food, and great numbers, who would no doubt recover from their diseases if proper attention were paid to them, are literally starved to death, or devoured by jackals at night.

Amongst the degrading doctrines of the Hindoo faith, a veneration for, and even a worship of, members of the brute creation is not the least remarkable. The cow, in particular, commands the most exalted reverence; and this venerable quadruped may be seen in cities sauntering up and down in the most public places, perfectly at her ease, and calling forth expressions of profound respect. The monkey likewise ranks amongst the higher grade of animals, and is allowed to roam at large wherever he lists—a chartered thief, now laying the confectioner's sweetmeats under tribute, and anon taxing the fruiterer for a portion of his juicy store. But this superstition reaches its climax in the hospitals which are erected for affording shelter and succour to sick and infirm brutes, including lice, fleas, and other insects. It must be an exceedingly nice investigation for those who preside as medical attendants over such institutions, to determine the state of health of such patients. Other animals besides these are held sacred, but some quadrupeds are treated with great cruelty. The draught horses, in particular, Bishop Heber informs us, are barbarously abused; nor is there much sympathy shown to human beings, who are often allowed to perish from disease or hunger under the canopy of heaven, without awakening a sigh in the bosoms of the onlookers. Lepers are regarded as objects of divine wrath, and are treated accordingly, sometimes being burned or buried alive.

The peculiar character of the Hindoo creed is derived from their tenet respecting the transmigration of souls. The spirits of the dead are said to enter a receptacle corresponding to the previous character of the individual. The immortal part of the just and good, however insignificant the person may have been, migrates into a hermit, a Brahmin, a demigod, and so forth, rising in dignity according to the degree of merit. The wicked, on the other hand, not only are degraded as human beings, but are compelled to lodge in the bodies of animals. The Hindoo oracles endeavour to establish a degree of conformity between the punishment awarded and offences committed. The pilferer of grain is metamorphosed into a rat, and he who stole fruits or roots becomes an ape. Others are degraded into worms, insects, and so on. The person thus lowered in the scale of creation must pass through a long succession of degraded births before he can reassume the human form. This system of rewards and punishments, although confined to the earth, does not exclude the belief of a heaven and a hell hereafter. The celestial mansions, like those of the Mohammedan, are replete with objects of voluptuous enjoyment; but only Brahmins and persons of high attainments or great sanctity are permitted to enter these blissful abodes. Some ardent devotees aspire to a higher destiny, and hope to be absorbed into the essence of the Supreme Being, where they shall repose for ever on an unruffled sea of bliss. The place of final punishment, in like manner, consists of different compartments, the penalties inflicted in which correspond to the iniquities of those who are doomed to enter within their dismal precincts.

The devotion of the Hindoos consists in a system of ceremonious observances, not only troublesome in themselves, but encroaching on the moral duties, nay, the whole business of life. Such a stock of atoning merit is by this means conferred, that the weightier matters of the law seem to be superseded; at all events this external devotion is not inconsistent with the most scandalous crimes. The observances commence in the morning with ablutions and prayers, the worship of the rising sun, in the inaudible recitation of their holy writings, in meditation, and the like. The five sacraments are then performed, which are, teaching and studying the sacred books, offering cakes and water, an oblation of fire, in giving rice and other food to living creatures, and in receiving guests with honour. The whole of these ceremonies are necessarily abridged, for the entire day would scarce suffice for their perfect performance. The early Hindoos seem to have borrowed, and to have greatly extended, the typical impurities of the Mosaic law; and the rules on this subject, pointing out the causes of defilement and the modes of purification, are numerous and absurd. The death or birth of a child, touching a dead body, a newborn child, a Pariah or outcast, and so on, render people unclean; and the modes of purification are either bathing, stroking a cow, looking at the sun, or having the mouth sprinkled with water.

Penance and self-torture are regarded as essential to the attainment of a character for holiness; but in their attempts to suit the amount of penance to the magnitude of the offence, there is almost a total subversion of all moral distinctions. Acts naturally indifferent are classed with heinous immoralities; for instance, eating things forbidden is put on the same footing with killing a friend, and drinking forbidden liquor with killing a Brahmin. A particular class of devotees, called *yogues* or *fakirs*, signalise their piety by enduring the severest tortures with a firmness and perseverance worthy of the holiest cause. These consist in burying themselves in the depths of forests, either in a state of perfect nakedness, or having their bodies coated with ashes and cow-dung; in allowing the nails of their hands and feet to grow till they assume the dimensions and appearance of bird's claws; roasting themselves before huge fires; immuring themselves in the ground, and leaving only a small breathing-hole; going about with small spears or rings pierced through the most tender parts of the body, and hot irons applied to the side; holding their hands above their head till they have lost the power of bringing them down again, and become withered like that of the individual mentioned in the Evangelists; clenching the fists till the nails penetrate the palms; turning their faces to the sun till they cannot regain their natural position, or gazing on his in-

tense blaze till their eyesight is extinguished; lying on iron spikes; tearing the flesh with whips; chaining themselves for life to the foot of a tree; and performing other such-like acts of slow suicide. Some of their attitudes are exceedingly fantastical; for instance, Bishop Heber saw a devotee hopping about on one foot, having made a vow never to put the other to the ground, which was now shrivelled up, contracted, and useless. Begging holds a conspicuous place among the religious duties of the Hindoos. Mr Ward affirms that an eighth part of the inhabitants of Bengal and Behar subsist in this manner; thus constituting a mendicant population of upwards of two millions. Religious pilgrimages are held in high esteem, and the holy places have generally been established near the sea, the sources and junctions of rivers, the tops of remarkable hills, hot springs, caves, waterfalls, and places of difficult or dangerous access. All the principal roads are crowded with people hastening to these holy places. Some are held in higher veneration than others; and it is no uncommon occurrence, in the crush and tumult of the multitude to reach these fabulous Bethesdas, for numbers to be trodden to death under foot, or precipitated into the water and drowned.

The sacred writings of the Hindoos are of two kinds—the Vedas and Shastres. The former may be termed their Scriptures, the latter expositions of them. The Vedas are divided into four books, all written in the Sanscrit language. The first book is called *Rug Veda*, which signifies the Science of Divination, concerning which it principally treats. The second is distinguished by the title of *Sheekam*, which signifies Piety or Devotion; and this book treats of religious and moral duties. The third is the *Judga Veda*, which, as the word implies, includes the whole science of religious rites and ceremonies. The fourth is denominated *Obater Bah*, or the knowledge of the Good Being, and accordingly this book comprehends the whole essence of theology and metaphysical or moral philosophy. These various books are acknowledged to be of great antiquity, but abound in such absurdities, as to be of little or no value as historical documents.

The temples for the celebration of Hindoo worship appear to have been in ancient times of the most magnificent description, as is proved by the remains of those of Elephanta and Salsette. The temples of the present day do not exhibit such elaborate grandeur, many containing only one apartment, and few having more than three or four. The crowds which besiege them on solemn occasions celebrate their observances in an open area fronting the gates, so that nothing is required within but accommodation for the images, and one or two attendants. The idols are composed of every possible kind of material, from gold down to wood or clay, smeared over with a little red paint. Any figure, either of brute or man, or centaur-like combinations of both, serves for a god, and is reverenced as such by the ignorant Hindoos, after a Brahmin has consecrated them by a process of solemn buffoonery. When placed in the temple, every image has a daily round of homage performed before it, and is furnished with a regular allowance of food, which, after remaining for a limited time, is served out amongst the attendants. These offerings are profusely lavished on great annual festivals, whilst the multitudes without sing indecent songs, and throw themselves into the most fantastical attitudes and motions. The various articles of maintenance bestowed upon the goddess Kalee, for example, in her temple at Kaleeghata, are considered by Mr Ward as worth about £9000 annually.

There is no doubt that, at no very distant period, the bloody deities of the Hindoos were propitiated with human sacrifices; and in confirmation of this, some of the rites still remain. Children were sacrificed by being thrown into the river Ganges, until the practice was put a stop to by the British government. Old women are still occasionally burned, in order that their spirits may haunt the spot where they are offered up, and entail a curse upon it. The *suttee*, or custom of a widow burning herself on the funeral pile of her husband, was a well-known and common rite of the Hindoo religion, till prohibited by order of the British government; and the festival of Juggernaut, another sanguinary ritual also happily on the decline, is celebrated by the sacrifice of numerous victims. This idol-car is a lofty ornamented structure, in which are representations of the god, and of Bala Rama and Soobhadra, said to be his brother and sister. This infernal machine, for it deserves no better name, is dragged along amid shouts of triumph by the infatuated multitude, its path being marked by the bodies of mangled victims, who voluntarily throw themselves before the wheels, and are crushed to death. The most indecent figures are portrayed on the chariots used at the temples. With such an impure religion, it is not a matter of surprise that the state of morals is very low in India.

From time to time during the lapse of ages, various sectaries have arisen amongst the Hindoos, each with peculiar objects of adoration and modes of worship. Brahma, as already observed, is at the head of no sect; and Vishnu and Siva, the two powers next to him, divide in a great measure the worship of Indian devotees. Among forty-three leading denominations, Mr Ward reckons twenty to attach themselves to Vishnu, nine to Siva, four to his wife Doorga, under the name of Saktas, while ten select inferior objects of adoration. The zealous adherents of the rival sects of Vishnu and Siva are avowed enemies, and hold each other up to odium and ridicule. But the most important schism is that between the disciples of Brahma and the adherents of Boodh, to which allusion has already been made. The latter have objects of worship, a creed, ceremonies, and institutions entirely peculiar. Their temples are much more splendid than those of the followers of Brahma, and their priests live in spacious convents. Boodhism is no longer professed in India Proper, but there is a sect called the Joinas, very numerous in Western Hindoostan. They combine in some measure the practice and doctrine of the two rival systems.

The Sikhs, who recently offered such formidable opposition to the British dominion in India, are the only sect in Hindoostan who have abjured the errors of Hindooism, and adopted a purer and more rational creed. Their founder, Nânuk Shah, who was born A.D. 1469, was an able and good man, and was anxious to effect a union between the Mohammedans and Hindoos, and for this purpose endeavoured to prevail upon the members of both sects to forego those parts of their respective systems which were not essential to the maintenance of a pure and holy life. He succeeded in obtaining numerous disciples; and his elevated religion, united to the immaculate purity of his life, gave him great influence, both of a temporal and spiritual nature, over those who embraced his doctrines. Even to this day his followers continue to venerate his memory; and notwithstanding the persecutions to which they have been subjected by their Mohammedan neighbours, they have continued to receive such accessions to their numbers, and have approved themselves such distinguished warriors, that it lately required no small effort on the part of the greatest military power in India to repel their aggressions. It is a remarkable circumstance that the Sikhs should have been able to receive and to maintain so pure a creed in the midst of the grossest idolatry; and the formidable opposition which they have succeeded in presenting to such powerful enemies as they have had occasion to contend with, shows the tendency which freedom from degrading superstition evidently has in elevating the human character. Had they continued to adhere to the ancient usages of their country, it would have been impossible for them to maintain their position as they have done; for the distinctions of caste, and the interminable ceremonies enjoined by the Hindoo faith, tend not only to deteriorate the mental and bodily powers, but to make serious encroachments upon the time which ought to be dedicated to the active and necessary duties of life.

Decidedly the most vicious part of the Hindoo religion

is the division of the people into castes, or distinct classes. Such an arrangement strikes at the very root of social progress, and prevents national improvement. The whole Hindoo population is divided into four branches or tribes, denominated Brahmins, Kyetra, Bhysya, and Soodra. The rank, occupation, and duties of these several castes are fully explained in their Vedas, or holy books. The Brahmins are the priests; they are required to be virtuous, learned, just, peaceable, and self-denying. If these were ever the distinguishing traits of their order, the very reverse are the features of their character now. The Kyetra is the military caste: the Vedas require of them a thirst for glory; to die rather than retreat; generosity and princely conduct to captives. Bhysya form the agricultural part of the community; their duties are briefly defined as cultivators and traffickers. The fourth or Soodra caste consists of labourers, who are enjoined to serve with patience and fidelity; the former, perhaps, they generally do, but as for the latter, it is only when constrained by fear of punishment or loss of pay. The two middle castes have almost become extinct, or rather amalgamated with the former and latter. Thus it may almost be said that the whole Hindoo nation is now composed of Brahmins or Soodras, both of which are divided into a great many degrees or sub-castes, so that there are many orders of Brahmins as well as of Soodras. Of the latter, the Koit is the highest, and the Hurry the lowest, which caste embraces shoemakers, mat-makers, bird-catchers, tanners, skinners, snake-catchers, and many others similarly employed.

By this division of caste or grade, no possible means exist for any person to rise in the scale of society; all motives to exertion or mental improvement are cut off; no actions, however noble, no discoveries, however important to society, would insure honour to a person of low caste; and those of high caste lose no honour or reputation by their ignorance and vice. Whatever be the mental abilities of a Hindoo, if born a Soodra, a Soodra he must remain; if the father be a snake-catcher, all his sons must be snake-catchers too; and the influence of caste follows him through all the ramifications of life. Persons of different castes or occupations cannot eat, drink, or smoke together; neither can they intermarry, nor meddle with each other's employment. If a Hindoo loses caste, which is the case if he breaks through any of the foregoing rules, the most distressing consequences ensue: no one will eat with him, or suffer him to come near his dwelling, or marry his children; his own wife and family disown him; looked upon as an outcast of society, he is deprived of all privileges, or means of comfort as long as he lives; and however respectable he may have been before, the meanest caste consider him a vagabond, and will not associate with him. It is caste that renders so many servants necessary to do the work which one or two might easily accomplish. They are born to one particular department of service, and no other can they perform without losing caste. Thus the man who fetches water cannot wait at table, nor the man who cooks the dinner serve it up; neither will the person who attends the table sweep the room afterwards—and so on through all the different pursuits of life. A native embracing Christianity loses caste by partaking of the Lord's Supper; it requires, therefore, great fortitude of mind to make a profession of faith in the gospel. There are many who have no caste, having been excommunicated because of some breach of the ceremonial laws of their religion, either by themselves or their forefathers; these are all termed Pariahs, and dare not touch the person, garments, food, utensils, or dwelling of a Hindoo of caste, as contamination follows. The Brahmins are a very lordly, domineering race, and exact the most severe homage of the Soodras. They themselves are under great restrictions, as well as the Soodras, particularly in the article of food, being prohibited from eating anything that has had life, except fish. This probably arises from their belief in the doctrine of transmigration; and as they believe that although the spirits of their ancestors may have entered the bodies of all beasts, birds, reptiles, and insects, they do not enter into another element, so that they may eat fish with impunity. Rice, with spices, milk, and ghee, or clarified butter, is their principal diet, although they may partake of the flesh of such animals as are offered in sacrifice to the gods, the laws of the religion permitting this.

The Brahmins though all eligible to the priesthood, yet do not all follow it. Some enter the military service of the East India Company, and others become clerks and copyists; but none are permitted to engage in menial employments: and in whatever state they are found, the same honour is paid by their associates, though perhaps not to that degree as if in priestly office. So great is the pride of the Brahmins, that they claim precedence of kings, and the noblest rajah will partake of food cooked or presented by a Brahmin, whilst the meanest Brahmin will not taste that which has been prepared by a Soodra, although that Soodra should occupy a much higher station, civilly, than himself. The religion which inculcates these arrangements is found to be almost unconquerable by Christian missionaries, for the adoption of Christianity involves a total change of opinion on the constitution of society; and it is a melancholy fact that few except the worst of the Hindoo populace will become proselytes. It is now generally acknowledged, that in order to make any impression on the religion of the Hindoos, it will be absolutely necessary to commence with the instruction of the young in various branches of useful knowledge, to which happily the Brahmins offer no objection, while such instruction is universally desired by the people.

BOODHISM.

Boodhism, or the religion of Boodh or Bhud, is considerably elevated above either pure paganism or Hindooism, and is deeply interesting from being the most prevalent form of religion upon earth. The number of the whole human race being estimated at 965,000,000, nearly the one-half, or 400,000,000, are Boodhists. According to the account of Mr Howard Malcom, in his 'Travels in the Burman Empire,' to whom we are indebted for the following particulars, Boodhism is professed by half of the population of China, Lao, Cochin-China, and Ceylon; all of Camboja, Siam, Burmah, Thibet, Tartary, and Loo-Choo; and a great part of Japan, and most of the other islands of the southern seas, are of this faith. In some parts of Hindoostan it is the great rival of Hindooism; but its principal stronghold is in the adjoining empire of Burmah.

Gaudama.

'*Boodh* is a general term for divinity, and not the name of any particular god. There have been innumerable Boodhs, in different ages, among different worlds, but in no world more than five, and in some not any. In this world there have been four Boodhs—Kankathan, Gaunagông, Kathapa, and Gaudama. There is another yet to follow—namely, Arcemadayeh.

It has often been supposed that Boodhism resembles Brahminism or Hindooism, which is a great mistake. No two systems can be more opposite, or bear less evidence of being derived from each other. Brahminism has incarnations, but Boodhism admits of none, for it

has no permanent god. That has a host of idols; this only one. That enjoins bloody sacrifices; this forbids all killing. That requires atrocious self-tortures; this inculcates fewer austerities than Catholicism. That makes lying, theft, and other vices sometimes commendable, and describes the gods as excelling in these enormities; this never confounds right and wrong, and never excuses any sin. That makes absorption into deity the supreme good; this annihilation. In fine, I know of no important resemblance.

Boodhism inculcates no principle of caste, which is a striking difference from what prevails among the Hindoos; and from this and other causes it is believed to be much more ancient as a religion than Brahminism. The probability seems to be, that Brahminism grew out of Boodhism, and gained power and numbers in Hindoostan till the close of the first century of the Christian era, when the Brahmins were able to commence that persecution of which their own records speak, and which drove out the teachers of Boodhism into Farther India, whence it extended into China.

The most extraordinary peculiarity of Boodhism is the want of any existing God. Adoration or respect is merely paid to the image of Gaudama, who was a god at a former period, but is now annihilated, or entered into annihilation. Gaudama was the son of a king, and born about 626 years before the commencement of our era. He had previously lived in four hundred millions of worlds, and passed through innumerable conditions in each. In *this* world he had been almost every sort of worm, fly, fowl, fish, or animal, and in almost every grade and condition of human life. Having in the course of these transitions attained immense merit, he at length was born son of the above-named king. The moment he was born, he jumped upon his feet, and spreading out his arms, exclaimed, "Now am I the noblest of men! This is the last time I shall ever be born!" His height, when grown up, was nine cubits. His ears were so beautifully long, as to hang upon his shoulders; his hands reached to his knees; his fingers were of equal length; and with his tongue he could touch the end of his nose! All which are considered irrefragable evidences of his divinity.

When in this state his mind was enlarged, so that he remembered his former conditions and existences. Of these he rehearsed many to his followers. Five hundred and fifty of these narratives have been preserved—one relating his life and adventures as a deer, another as a monkey, elephant, fowl, &c. &c. The collection is called *Dzat*, and forms a very considerable part of the sacred books. These legends are a fruitful source of designs for Burman paintings. Of these I purchased several, which do but bring out into visible absurdity the system they would illustrate.

He became Boodh in the thirty-fifth year of his age, and remained so forty-five years, at the end of which time, having performed all sorts of meritorious deeds, and promulgated excellent laws far and wide, he obtained "nic-ban;" that is, entered into annihilation, together with five hundred priests, by whom he had been long attended. This occurred in Hindoostan about 2380 years ago, or B.C. 546. At his death he advised that, besides obeying his laws, his relics and image should be worshipped, and pagodas built to his memory, till the development of the next Boodh. He is invariably represented in the same manner, except that sometimes he is made to wear a crown, necklace, ornaments on his arms, &c. I have seen them of all sizes, from half an inch long to seventy-five feet—of wood, stone, brass, brick, clay, and ivory.

The next Boodh is to appear in about seven or eight thousand years from the present time. His height will be eighty cubits, his mouth will be five cubits wide, and the length of the hairs of his eyebrows five cubits. The precise time of his arrival is not predicted. No laws or sayings of the first three Boodhs are extant. Those of Gaudama were transmitted by tradition, till 450 years after his decease, when they were reduced to writing in Ceylon—that is, A.D. 94. These are the only sacred books of the Burmans, and are all in the Pali language. They are comprised in three divisions, each of which is divided into distinct books or sections. The whole is called the *Bedagat*.

According to the Bedagat, the universe consists of an infinite number of systems: each system consists of a great central mountain surrounded by seas, and four great islands, each surrounded by five hundred smaller ones. This earth is in the southern cluster of islands, and we are living on the larger one. It is a convex plane, not a sphere; and is divided by mountains and navigable seas. Below its upper crust, on which we live, is water twice as deep as the earth is thick. The whole is supported on a stratum of air twice as deep as the water. Beneath is a vacuum. The celestial regions consist of twenty-six principal heavens, one above another; and the infernal regions of eight principal places of punishment, each surrounded by sixteen smaller ones. In one of the heavens there are pleasant habitations for mortals after death; and at the king's principal residence there is an elephant of stupendous size. This animal is of immense height, and has seven heads; each head has seven tusks, and each tusk seven tanks. In each of these tanks grow seven lilies; each lily has seven blossoms; each blossom has seven petals; each petal bears up seven palaces, and in each palace are seven nymphs, or wives of the king, each surrounded by 500 attendants. Another elephant has one great head, thirty uzenas long, on which the king occasionally rides; and thirty-two smaller heads, for the thirty-two royal princes. Of the principal hells, four inflict punishment by heat, and the other four by cold.

Not only has the universe and all its systems existed from eternity, but also the souls of all the inhabitants, whether animals, men, or celestials. These souls have from eternity been transmigrating from one body to another, rising or falling in the scale of existence and enjoyment, according to the degree of merit, at each birth. This rise or fall is not ordered by any intelligent judge, but is decided by immutable fate. In passing through these various forms of existence, the amount of sorrow endured by each soul is incalculable. The Bedagat declares that the tears shed by any one soul, in its various changes from eternity, are so numerous, that the ocean is but a drop in comparison! Existence and sorrow are declared to be necessary concomitants; and therefore "the chief end of man" is to finish this eternal round of changes, and be annihilated.

The great doctrines of this faith are five—namely, 1. The eternal existence of the universe, and all beings. 2. Metempsychosis. 3. Nic-ban, or annihilation. 4. The appearance, at distant periods, of beings who obtain deification and subsequent annihilation. 5. The obtaining of merit. Of the first four of these enough has been already said. The last is more deserving of notice, embracing as it does the whole system of morals.

Merit consists in avoiding sins and performing virtues, and the degree of it is the sole hope of the Boodhist. The sins which are to be avoided are described in a moral code, consisting of five principal and positive laws:—1. Thou shalt not kill. 2. Thou shalt not steal. 3. Thou shalt not commit adultery. 4. Thou shalt not lie. 5. Thou shalt not drink any intoxicating liquor. These are explained and branched out, so as to include all sins of the same kind under each head. The first of these laws is extended to all killing, even that of animals for food. The strictly religious will not take the life even of vermin. War and capital punishments are considered forbidden by the first law.

Sins are divided into three classes:—1. Those of the body—such as killing, theft, &c. 2. Those of the tongue—as falsehood, discord, harsh language, idle talk, &c. 3. Those of the mind—as pride, covetousness, envy, heretical thoughts, adoring false gods, &c. The sacred books portray strongly the evils of pride, anger, covetousness, and inordinate appetites. Men are urged to avoid excessive perfumes, ornaments, laughter, vain joy, strong drink, smoking opium, wandering about the streets in the night, excessive fondness for amusements,

frequenting bad company, and idleness. Those who aspire to nic-ban are cautioned to abhor sorcery, not to credit dreams, not be angry when abused nor elated when approved, not to flatter benefactors, not to indulge in scorn or biting jests, and meet carefully to avoid enkindling strife and hatred.

The states of the mind are resolved into three classes: —1. When we are pleased in the possession of agreeable things. 2. When we are grieved and distressed by evil things. 3. When neither do good things gratify us, nor evil things distress. The last is the best state, and in it a man is rapidly preparing for nic-ban. In this there is no small resemblance to the doctrine of the Stoics, and some approach to the Christian doctrine of weanedness from the world. Some of their books abound in good comparisons, such as, that he who runs into sinful enjoyments is like a butterfly who flutters round a candle till it falls in; or one who, by licking honey from a knife, cuts his tongue with the edge. There is scarcely a prohibition of the Bedagat which is not sanctioned by our Holy Scriptures, and the arguments appended to them are often just and forcible.

Merit is of three kinds:—1. *Theela*, or the observance of all the prohibitions and precepts, and all duties fairly deducible from them; such as beneficence, gentleness, integrity, lenity, forbearance, condescension, veneration for parents, love to mankind, &c. &c. 2. *Dan*, or giving alms and offerings. This includes f[illegible] priests; building kyoungs, pagodas, and zayats; [illegible] bells at pagodas; making public roads, tanks, and w[illegible] planting trees for shade or fruit; keeping pots of cool water by the wayside for the use of travellers; feeding criminals, birds, animals, &c. 3. *Bawana*, or repeating prayers, and reading religious books.

Alms-deeds are meritorious according to the objects on which they are bestowed, and proportioned to the following scale:—1. Animals. 2. Common labourers, fishermen, &c. 3. Merchants and the upper classes, when in necessity. 4. Priests. For alms of the first class, the rewards are long life, beauty, strength, knowledge, and prosperity, during a hundred transmigrations; for those of the second class, the same during a thousand transmigrations; for the third, the same during ten thousand; for the fourth, a greater number, but indefinite, being graduated according to the degree of sanctity the particular priests may possess.

Many discourses said to have been delivered by Gaudama are given in the Bedagat. In these, the duties of parents, children, husbands, wives, teachers, scholars, masters, slaves, &c. are drawn out and urged in a manner which would do honour to any casuist.

The following is part of one of these discourses, addressed to a distinguished personage, who sought his instruction how to avoid evil:—

"Know thou, that to keep from the company of the ignorant, and choose that of learned men; to give honour to whom it is due; to choose a residence proper to our station, and adapted for procuring the common wants of life; and to maintain a prudent carriage, are means to preserve a man from evil doings. The comprehension of all things that are not evil, the exact knowledge of the duties of our station, and the observance of modesty and piety in our speech, are four excellent modes of renouncing wickedness.

By ministering a proper support to parents, wife, and family, by purity and honesty in every action, by alms-deeds, by observing the divine precepts, and by succouring relations, we may be preserved from evil. By such a freedom from faults, that not even the inferior part of our nature manifests any affection for them, by abstinence from all intoxicating drink, by the continual practice of works of piety, by showing respectfulness, humility, and sobriety before all, and gratitude to our benefactors; and finally, by listening often to the preaching of the word of God, we overcome evil inclinations, and keep ourselves far from sin. Docility in receiving the admonitions of good men, frequent visits to priests, spiritual conferences on the divine laws, patience, frugality, modesty, the literal observance of the law, keeping before our eyes the four states into which living creatures pass after death, and meditation on the happy repose of nic-ban—these are distinguished rules for preserving man from wickedness."

Pagodas are innumerable. In the inhabited parts there is scarcely a mountain peak, bluff bank, or swelling hill, without one of these structures upon it. Those of Pegu and Siam are all formed upon one model, though the cornices and decorations are according to the builder's taste. In general they are entirely solid, having neither door nor window, and contain a deposit of money, or some supposed relic of Gaudama. From the base they narrow rapidly to about mid-way, and then rise with a long tapering spire, surmounted with the sacred tee. Some of the pagodas around Ava, and especially those at Paghan, are less tapering, and more resembling ordinary temples.

Zayats are not exclusively religious buildings. Some are intended to contain idols, and some are for the accommodation of worshippers and travellers, and for town-halls. The majority contain no idols, and are intended only to afford shelter for worshippers and travellers. Some of these are mere sheds, open on all sides; but in almost all cases they are built in a far more durable and costly manner than dwelling-houses. [illegible]very village has a zayat, where the stranger may [illegible] stay for many days, if he please; and many [illegible] find them a comfortable lodging-place. Like [illegible]s of Hindoostan, they are of unspeakable [illegible] country destitute of inns, and where every house has its full complement of inmates. Many zayats, especially near great cities, are truly beautiful, and very costly. The ceilings and pillars are not only elaborately carved, but completely gilded, and the stucco floors rival marble in hardness and polish.

Worship is not performed collectively, though crowds assemble at the same time on set days. Each one makes his offerings and recites his prayers alone. No priests officiate; no union of voice is attempted. On arriving at the pagoda, or image, the worshipper walks reverently to within a convenient distance, and laying his offering on the ground, sits down behind it, on his knees and heels, and placing the palms of his hands together, raises them to his forehead, and perhaps leans forward till his head touches the ground. This is called the *sheeko*. He then utters his prayers in a low tone, occasionally bowing as before; and having finished, rises and carries forward his gift, laying it somewhere near the idol or pagoda. Some proceed first to one of the great bells which hang near, and strike several times with one of the deer's horns which always lie beneath. When one goes alone, this is seldom omitted. There are four set days in every lunar month on which the people assemble in greater numbers at the pagodas to offer their individual prayers. These days are at the new and full moon, and seven days after each; so that sometimes their Sabbath occurs after seven days, and sometimes after eight.

Boodhist Priest.

Boodhist priests are not a caste or hereditary race. Any one may become a priest, and any priest may return to a secular life at pleasure. Thousands, in fact, return every year, without the least reproach. On becoming a priest, a yellow robe is assumed, and celibacy, with numerous mortifications, is enjoined. Their office may be called a sinecure, as they seldom preach or perform any service, except teaching and giving special religious advice. They are of different degrees of rank, and subsist entirely on the contributions of the people. Their number is very great. Ava, with a population of about 200,000, is said to contain nearly 20,000 priests.

In point of moral obligation, and the inculcation of purity of life, Boodhism is infinitely superior to Hin-

doolsm. It has no mythology of obscene and ferocious deities, no sanguinary or impure observances, no self-inflicted tortures, no tyrannising priesthood, no confounding of right and wrong, by making certain iniquities laudable in worship. In its moral code, its descriptions of the purity and peace of the first ages, of the shortening of man's life because of his sins, &c. it seems to have followed genuine traditions.

At the same time, we must regard Boodhism with unmeasured reprobation, if we compare it, not with other false religions, but with truth. Its entire base is false. It is built, not on love to God, nor even love to man, but on personal merit. It allows evil to be balanced with good, by a scale which reduces sin to the shadow of a trifle. To sheeko to a pagoda, or offer a flower to the idol, or feed the priests, or set a pot of cool water by the wayside is supposed to cancel a multitude of sins. The building of a kyoung or pagoda will outweigh enormous crimes, and secure prosperity for ages to come. Vice is thus robbed of its terrors, for it can be overbalanced by easy virtues.'

LAMAISM.

In Thibet, Tartary, and other parts of Central Asia, inhabited by the Mongolian race, Boodhism assumes a different form and name, being more a religion of pure priestcraft and external observance, and including a belief in the continual personal presence of a supreme God. This branch of Boodhism, as it is believed to be, is usually called Lamaism, the word *Lama* literally signifying priest. Like Boodhism, this religion acknowledges no eternal, self-existent being. The idols, to the number of 108, are representatives of created beings, who ascended into the rank of gods before the present world was created, on account of their holiness. The chief god is Shigemooni, who appeared in the world for the last time a thousand years before the Christian era, and then instituted Lamaism, with a visible living representative of himself, called Dalai-Lama, or the Great Lama. The worship of this Grand Lama, therefore, is a principal feature in the system of belief.

It is understood and inculcated, that when the Grand Lama expires in the course of nature, his spirit immediately takes possession of some other body in a supernatural manner, which it is impious to inquire into, and is only comprehended by the attendant priests. In point of fact, the religion which inculcates this absurdity is idol-worship under a different name, the idol being a living creature instead of an inanimate object, as in ordinary paganism; and the whole system seems to have been devised in order to support a numerous host of priests and religious establishments.

Dalai-Lama, or the Grand Lama, is at the head of both ecclesiastical and secular affairs in Thibet, which may be considered a theocratical state. The usual residence of the Dalai-Lama is in two monasteries situated in the vicinity of the capital, Lassa, in each of which he dwells alternately. He is surrounded in every direction by a vast number of priests; but no woman is permitted to pass the night in the building where he lodges. This arises undoubtedly from the purity which is attributed to him, for he is called the *immaculate*. The natives, as well as a great crowd of foreigners (for all the Mongol tribes in Russia acknowledge him), undertake fatiguing pilgrimages in order to pay their homage to him, and obtain his blessing. He receives them sitting upon a kind of altar, upon a large and splendid seat, with his legs crossed. The Tartars, next to the inhabitants of Thibet, pay him the greatest reverence. They come to him from the most distant regions, and the princes, to whom he shows no more respect than to others, submit to the same ceremonies as their people. He salutes no one, never uncovers his head, rises up before no one, and is satisfied with laying his hand upon the head of his worshipper, who believes that he has thereby obtained the pardon of his sins. His worshippers believe that the supreme divinity lives in him, that he knows and sees everything in the deepest recesses of the heart, and never needs to make inquiry in regard to anything. If he does this, it is only that unbelievers and the evil-minded may not have cause for complaint. He sometimes distributes, it is said, little balls of consecrated dough, which the Tartars use in many superstitious practices; but it is not true that balls made from his excrement are distributed, preserved in golden boxes, and even mixed with articles of food. His power was once greater than it is now, and he appointed and deposed the khans; but at present he is dependent on the emperor of China, although the latter, in a religious respect, is subjected to him. Two Chinese mandarins, with a garrison of 1000 Chinese, are maintained in his capital, and in the palace at Pekin the Chinese emperor supports a subordinate Lama, who is sent as a nuncio from Thibet.

When the Dalai-Lama dies, it is then necessary to discover where his spirit has chosen to be born anew. In this case all must submit to the opinion of some of the Lamas, who alone are acquainted with the signs by which he may be known, or, rather, who know what child the deceased has appointed for his successor. The worshippers of the Lama are divided, in general, into two sects, known by the titles of the *yellow* and *red caps*. Each sect is under three Lamas; the former is under the Dalai, Teeshoo or Bogao, and Taranaut Lamas; the latter, under the three shammars. The Dalai-Lama is the most distinguished of all, and next to him is the Teeshoo-Lama, who dwells at Teeshoo-Loomboo, ten days' journey from Lassa. The three shammars dwell in separate monasteries, the most distinguished of which is at Tassasudon, the capital of Bootan. Subordinate to them are numerous priests of different ranks, who are held in great respect, who superintend instruction, and some of whom live in a state of celibacy, according to certain rules similar to those of the Christian monks. At Lassa alone there are about three thousand monasteries.

MOHAMMEDANISM.

The religion of Mahomet, or Mohammed, and called Mohammedanism, partakes of a much more exalted character than any of the mythological superstitions already adverted to, inasmuch as it approaches a pure theism, or a belief in the one true God. This famed religion, which now prevails in Arabia, Egypt, the Moorish states, Turkey, Persia, and is extended in a scattered manner over the countries of south-eastern Asia, and numbers, according to common belief, more than one hundred millions of followers, originated in Arabia at the beginning of the seventh century of the Christian era.

At this period, eastern countries were in a condition to receive a new and vigorously-conducted form of religious belief. The scattered branches of the Christian church in Asia and Africa were at variance with each other, and had adopted the wildest heresies and superstitions. They were engaged in perpetual controversies, and torn to pieces by the disputes of the Arians, Sabellians, Nestorians, and Eutychians; whilst the simony, the incontinence, and general barbarism and ignorance which were to be found amongst the clergy, caused great scandal to the Christian religion, and introduced universal profligacy of manners amongst the people. While Christianity, in the manner it was abused by unenlightened followers, was of little avail in civilising the Asiatics, while the religion of the Jews was sunk into comparative insignificance, and while paganism still flourished in the East, Mohammedanism was introduced upon the scene, and in a wonderfully short period of time gave an entirely new cast to manners and form of belief. Arabia being the country in which this new religion was first promulgated, it is considered desirable to mention the nature of the religion which the people previously professed and now abandoned.

'The ancient Arabs are supposed to have been what are termed pure theists—that is, they are supposed to have believed in and worshipped one sole, omnipotent, and everlasting God. Historians, however, have sel-

dom correctly appreciated the meaning of these magnificent expressions in the mouth of a savage. In his mind such language is connected with ideas and feelings far other than those which a civilised man would express by it. These splendid epithets are the mere expressions of flattery and fear. The Deity now addressed, and whose favour is the object of present desire, is for the time the sole object of adoration. The very same savage, who believes in a host of gods, will address each of them by the term of THE ONE. If among many deities one is thought more powerful than the rest, he will be the oftenest addressed, the oftenest soothed by flattery. No epithet is so flattering as that which asserts his single existence. It exalts him above all beings, and leaves him without a rival. No epithet, therefore, will be so frequently employed. Being the most constantly adored, this more powerful divinity will have this epithet expressive of his sole existence so frequently connected with his name, that it will at length be regularly attached to, and form part of, that name. This was precisely the case with the Arabian objects of worship. It is certainly strange that, when complete evidence of this fact exists, really intelligent and circumspect historians should have believed in the pure theism of the Arabians.

Mr Sale, like many others, was deceived by pompous expressions:—"That they acknowledged one supreme God, appears (to omit other proof) from their usual form of addressing themselves to him, which was this:—'I dedicate myself to thy service, O God!—I dedicate myself to thy service, O God! Thou hast no companion, except thy companion of whom thou art absolute master, and of whatever is his.'" In the very next passage, however, Sale adds, "They offered sacrifices and other offerings to idols, as well as to God, who was also often put off with the least portion, as Mohammed upbraids them." Their scheme of divine government was simple, and like most others formed in the same state of civilisation. One god was supposed to be the supreme ruler; and subject to his sway was a vast multitude of inferior deities. "The Arabs acknowledged one supreme God, the creator and lord of the universe, whom they called Allah Taala, the most high god; and their other deities, who were subordinate to him, they called simply Al Ilahat, that is, goddesses." Idols were set up and worshipped; every field, every rivulet, had its divinities. The fixed stars and planets were also exalted into gods, and as such received adoration. Heaven, moreover, was peopled with angels, who, with the wooden, stone, and clay idols on earth, were regularly worshipped. How the Arabians can be supposed believers in a single godhead, under such circumstances, appears extraordinary.

The manner in which these various divinities were rendered propitious, at once determines the fact that no very exalted conception of a divinity existed in the minds of these barbarians. Fasts, pilgrimages, sacrifices, long and unmeaning prayers, were the means employed to obtain the divine favour.

"They are obliged," says Sale, "to pray three times a-day (some say seven times a-day): the first, half an hour or less before sunrise, ordering it so that they may, just as the sun rises, finish eight adorations, each containing three prostrations; the second prayer they end at noon, when the sun begins to decline, in saying which they perform five such adorations as the former; and the same they do the third time, ending just as the sun sets. They fast three times a year: the first thirty days, the next nine days, and the last seven. They offer many sacrifices, but eat no part thereof, but burn them all. They abstain from beans, garlic, and some other pulse and vegetables."

"The same rites," says a recent writer, "which are now accomplished by the faithful Mussulman, were invented and practised by the superstition of the idolaters. At an awful distance they cast away their garments; seven times, with hasty steps, they encircled the Caaba, and kissed the black stone; seven times they visited and adored the adjacent mountains; seven times they threw stones into the valley of Mina, and the pilgrimage was achieved, as at the present hour, by a sacrifice of sheep and camels, and the burial of their hair and nails in the consecrated ground."[1] The Arabians had many other superstitious practices; they held their women in a degraded condition; and, though refined in some points of manners, they had no written law, were governed despotically by chiefs, and were really barbarians and idolators. It was the debased religion of this people which Mohammed designed to improve, and we have now to see who this bold and ingenious man was, and how he carried his plans into execution.

Mohammed was born at Mecca, the capital city of Arabia Felix, A.D. 569, during the reign of Noosheervan, surnamed the Just, king of Persia. He was of the family of Haschem, and of the tribe of the Koreish, the noblest in Arabia. His father Abdallah was a younger son of Abdalmotalleb, and dying very young, and in his father's lifetime, left his widow and infant son in very mean circumstances, his whole substance consisting but of five camels and one Ethiopian female slave. Abdalmotalleb was therefore obliged to take charge of his grandchild Mohammed, which he not only did during his life, but at his death enjoined his eldest son, Abu Taleb, who was brother to Abdallah by the same mother, to provide for him for the future. This was very affectionately performed by Abu Taleb, who instructed him in the business of a merchant, which he followed; and to that end he took young Mohammed into Syria when he was but thirteen years old, and afterwards recommended him to Khadijah, a noble and rich widow, for her factor, in whose service he behaved so well, that, by making him her husband, she soon raised him to an equality with the richest in Mecca.

It was after he began, by this advantageous match, to live at his ease, that he formed the scheme of establishing a new religion, or, as he expressed it, of replanting the only true and ancient one professed by Adam, Noah, Abraham, Moses, Jesus, and all the prophets, by destroying the gross idolatry into which the generality of his countrymen had fallen, and weeding out the corruptions and superstitions which the latter Jews and Christians had, as he thought, introduced into their religion, and reducing it to its original purity, which consisted chiefly in the worship of one only God. He hereupon began to affect solitude, usually retiring for a month in the year to a cave in Mount Hara, near Mecca. He had indisputably a very piercing and sagacious intellect, and was thoroughly versed in all the arts of insinuation. The eastern historians describe him to have been a man of an excellent judgment and a happy memory; and these natural parts were improved by a great experience and knowledge of mankind, and the observations he had made in his travels. He is represented as a man of few words, of an equal, cheerful temper, pleasant and familiar in conversation, of inoffensive behaviour towards his friends and acquaintances, and of great condescension towards his inferiors; to all which were joined a comely, agreeable person, and a polite address—qualities of no small service in prepossessing those in his favour whom he attempted to persuade and govern.

'When the prophet was about four years old,' says Mahmut the Arabian, 'accompanying the sons of his nurse into the field, the blessed child retired into a cave, at the foot of the mountain Uriel, to pray, when the Archangel Gabriel appeared to him, and said, *Bismillar rahmanir rahimi;* that is, "In the name of God, compassionate and merciful, oh child greatly beloved, I am sent to displant from thy heart the root of evil; for thy ejaculations made the gates of Paradise to fly open!" The young resigned one said, "The will of thy Lord and mine be done." Then the angel opened his breast with a razor of adamant, and, taking out his heart, squeezed from it the black contagion which was derived from Adam; and having put the child's heart in its place again, he blessed him, and retired to the invisibles. From that time the young favourite of Heaven grew

up and prospered in all things, having the smiles of God and man. He was under the tuition of his uncle Abu Taleb, who, discerning the mark of an immense soul in his young nephew, was more solicitous for his welfare than if he had been his son. His fortune being low in the world, he had no other way to provide for his illustrious charge than by placing him as a factor to Khadijah, a widow of the same tribe with Mohammed, which was the noblest among the Arabians.'

Mohammed's marriage with Khadijah took place when they were respectively twenty-five years of age; and it was not till twelve years after this marriage that he began to fabricate his imposture, in the cave of Mount Hara, about three miles from Mecca, to which he usually retired during the month of Ramazan, being the time of Lent. At length, A.D. 609, when he was fully forty years old, he disclosed his prophetic mission, at first only to his own wife Khadijah. He told her that the angel Gabriel had appeared to him in glory, and declared that God had commissioned him as an apostle to reform the world; *that he then delivered to him the Koran for a Divine law*, which should complete all antecedent revelations. Khadijah gained for her husband an important proselyte in her uncle Waraka, a Christian, who was well read in the Old and New Testaments. He pronounced Mohammed '*to be the great prophet foretold by Moses the son of Amram.*' It is much more probable that Waraka was the assistant of Mohammed in composing the Koran than Sergius the monk, or any other person.

The next proselyte was Abubeker, a rich and respectable inhabitant of Mecca; and his example being followed by many others, Mohammed ventured on a bolder demonstration of his mission. At a numerous assemblage of the Koreishites, at a public entertainment to which he had invited them, he demanded who would become his vizier, or prime minister, assuring them that both happiness in this world and in that to come would accrue to his followers. The guests remained silent in surprise, when Ali, the son of Abu Taleb, a boy about fourteen years of age, started up enthusiastically, and said, 'I will be thy vizier, oh Prophet of God! I will break the teeth, pluck out the eyes, rip up the belly, cut off the legs of thine enemies.' The joy and approval testified by Mohammed to the zeal of his youthful disciple, was an apt and early specimen what manner of spirit he and his deputy were of.

The hostile proceedings and denunciations of the prophet against their idolatry, at length aroused the enmity of the Koreishites; but their threats were despised by him, and, in reply to the prudent remonstrances of his uncle Abu Taleb, he exclaimed, 'Though the Koreishites should arm against me the sun and the moon (alluding to the divinities whom they ignorantly worshipped), the one on my right hand, and the other on my left, I would not be shaken from my resolution.' He, however, retired for a while to a castle in Mount Safa, and his followers were banished from the city of Mecca. After this persecution, which lasted five years, in the tenth year of his mission (A.D. 618), he sustained a serious loss in the death of his uncle Abu Taleb; and this was followed a short time after by the death of his affectionate wife Khadijah, who had so generously made his fortune. On account of these misfortunes, this year was called the Year of Mourning. Instead of sinking under these adversities, however, upon being violently urged by the Koreishites, who still derided his pretensions, to exhibit some miracle worthy of their belief, Mohammed ventured, in the twelfth year of his mission, to publish the revelation of his night visit or journey to the seven heavens.

This event formed a striking epoch in his mission, and displayed in the strongest manner the dexterity as well as boldness of his measures. The question so forcibly put to him of establishing his mission by miracles, is therein artfully parried, and replied to by an appeal to the wonders wrought by Moses, which did not cause the reformation of Pharaoh, and to those of Jesus, which failed with the Jews; he also incidentally remarked, that miracles were designed rather to strike terror and to punish than to convince.

This famous journey is thus described by Mohammed: While he was in the Caaba, or sacred square building at Mecca, reclining on the sacred stone, the angel Gabriel came to him; he opened his breast, took out his heart, and washed it in a golden bason full of the water of *faith*, and then restored it to its place. The angel had seventy pairs of wings, and had the beast Alborak with him, on which the prophets used to ride; it was white, and partly horse, ass, and mule, or a middle between the two last, and went as fast as the lightning, which the name Alborak, in Arabic, signifies. When he was brought to Jerusalem by the angel, all the prophets met him, and owned his superiority. He ascended to heaven with the angel, on a ladder of divine light, and left the beast Alborak at Jerusalem till he descended again. He went through seven heavens before he came to the throne of God, which was in the last one, and Gabriel left him at the entrance of it, and waited till he returned from conversing with God, who gave him the offer to be next himself; but he rather chose to descend again to the earth to propagate his religion. His heavens were all 500 years' journey distant from one another. One was of silver, another of gold, another of emeralds, &c. and the last of light. He met some one of the patriarchs or prophets in each of them. In the first he met and discoursed with Adam; in the second, with John the Baptist and Jesus; in the third, with the patriarch Joseph; in the fourth, with Edris or Enoch; in the fifth, with Aaron; in the sixth, with Moses; in the seventh, with Abraham. Thence he was carried up to *Sedrat*, the lotus tree, whence were the sources of the four rivers of Paradise. He saw angels in the likenesses of all creatures in these heavens. He saw a great bull bearing the earth on his horns, and when he shook his head there was an earthquake. There was also a cock, which stood on one heaven, and his head reached another; his voice was heard through heaven and earth, and set all the cocks on earth a-crowing. He saw an angel of such stature that there was 70,000 days' journey between his eyes. The proportion of a man's height to the distance between his eyes is as seventy-two to one: so that his stature must then have been 14,000 years' journey, four times the height of all his heavens together, in which he was quite out of his mathematics. In the seventh heaven, where God and Christ were, was an angel with 70,000 heads; and in each head 70,000 tongues, with which he praised God. Gabriel accompanied him down from heaven to Jerusalem, and from thence conveyed him, with the beast Alborak, to Mecca; and all this was done in the tenth part of a night. In the conclusion of this extraordinary fabrication, he skilfully adds, that when he was enjoined to repeat fifty prayers each day, he intreated for his nation, and they were finally reduced at his intercession to five. To finish the wonder, he was returned back to the Caaba ere the crier called him to prayers; and 'thus,' concluded Mohammed, 'did I bring with me the prescribed number of prayers, and lessened the burden for my nation.'

This story seemed so absurd and incredible, that several of his followers left him on account of it; and it had probably ruined the whole design, had not Abubeker vouched for his veracity, and declared that, if Mohammed affirmed it to be true, he verily believed the whole; which happy incident not only retrieved the prophet's credit, but increased it to such a degree, that he was secure of being able to make his disciples swallow whatever he pleased to impose on them for the future. 'And I am apt to think,' says Sale, 'this fiction, notwithstanding its extravagance, was one of the most artful contrivances Mohammed ever put in practice, and what chiefly contributed to the raising of his reputation to that great height to which it afterwards attained.'

In this memorable year twelve citizens of Medina swore allegiance and obedience to the Prophet, whence they were styled, by way of dignity, *Al Ansar*—that is,

'The Defenders;' and the year A.D. 620 was denominated the 'accepted year.' On Mount Akaba, near Mecca, seventy-three proselytes were soon after added to their number, and swore to defend the prophet from all insult, as they defended their own wives and children. 'If,' said they to the apostle of God, 'we be slain in thy cause, what shall be our reward?' He answered 'Paradise.' 'Then' said they, 'Stretch forth thy right hand,' and he did so; then they took the oath of obedience, promising rather to die than be perjured. Mohammed now established twelve apostles of Islamism, which was the name he gave to his religion, himself being the prime instructor and chief of all the true believers; and he then sent away the Ansars, his followers, and his family, to Medina, for security, and remained behind at Mecca, attended only by Abubeker and his son-in-law Ali.

By the protection which his uncle Abu Taleb had extended to Mohammed, he had been preserved thus far from his enemies; but the charge and dignity of the priest and guardian of the Kaaba having now, by the death of Abu Taleb, become the post of a member of the family of Ommiyah, a declared enemy to the family of Haschem, to which Mohammed belonged, the Koreishites, irritated and alarmed at the progress making by the new doctrine at Medina, resolved to destroy its author and chief support. This conspiracy was scarce formed, when, by some means or other, it came to Mohammed's knowledge, and he gave out that it was revealed to him by the Angel Gabriel, who had now ordered him to retire to Medina. Whereupon, to amuse his enemies, he directed Ali to lie down in his place, and wrap himself in his green cloak, which he did; and Mohammed escaped miraculously, as they pretend, to Abubeker's house, unperceived by the conspirators, who had already assembled at the prophet's door. They, in the meantime, looking through the crevice, and seeing Ali, whom they took to be Mohammed himself, asleep, continued watching there till morning, when Ali arose, and they found themselves deceived.

In the recesses of a cave near Mecca, Mohammed and Abubeker eluded for three days the pursuit of their enemies. 'There are only two of us,' said the apprehensive disciple, when he expected the pursuers to penetrate their retreat. 'There is a third, even God himself,' said his intrepid chief; 'he will defend us.' According to tradition, Mohammed afterwards asserted that a miracle was here wrought in his behalf; for that his enemies, approaching the cave, found that its entrance was covered by spiders' webs hanging from the trees, which convinced them that no person had entered it for a long time. After a perilous journey, Mohammed entered Medina in triumph, being enthusiastically received by the Ansars, who disputed for the honour of entertaining the prophet, and took hold of the bridle of his camel. Mohammed then desired them to let her take her own way, for she was a stubborn beast; which she took accordingly, and stopped at the stable of two rich orphans, Sahali and Sohaili, where the prophet dismounted. This spot he purchased from the orphans, after refusing their offer to bestow it upon him, and Abubeker paid the money. He erected thereon a mosque, and a habitation for himself, at which he is said to have laboured with his own hands. Medina henceforth received the august title of *Medinat al Nabi*, or the 'City of the Prophet.'

The Mohammedan era, called the Hejira, takes its commencement from the date of Mohammed's flight from Mecca to Medina. The generality of writers place this epoch on Friday the 16th of July, A.D. 622. It is this event which has rendered Friday the solemn day of the week for his followers; this choice also agreeing with the customs of the Arabians, who held their assemblies usually on the Fridays. The word *Hejira* is derived from the Arabic verb *Hajara, to abandon one's native country, to emigrate on account of persecution;* which comes from the Hebrew *Hugar, the stranger or emigrant*, the name of Ishmael's mother.

It was from this period that Mohammed, having fully ascertained the hate of his enemies, and the extent of his own power, proceeded to lay aside the arts of persuasion and patient endurance, whereby he had hitherto sought to propagate his tenets; and elated by the devotion of his disciples and his reception at Medina, he framed henceforth the revelations of the Koran in a tone which proclaimed him a persecutor, and empowered his followers to make war against all opposers. The successful battle of Beder followed soon after; and he then made known those doctrines which have rendered the arms of the Mussulmans so formidable—namely, 'that no one can escape his destiny; inasmuch as the man whose days are not complete, will escape unhurt from a shower of arrows, when he whose fatal term has arrived, cannot escape death by any precaution whatsoever.' The second incitative is that which the present occasion furnished him with:—'The sword,' exclaimed the prophet, 'is the key of heaven and of hell; *a drop of blood shed in the cause of God, a night spent under arms*, is of more avail than two months of fasting and prayer. Whosoever falls in battle, his sins are forgiven: at the day of judgment his wounds shall be resplendent as vermilion, and odoriferous as musk; the loss of his limbs shall be replaced by the wings of angels and of cherubim.'

This victory, the first of Mohammed's battles, was gained, in the second year of the Hejira, over the idolatrous Meccans, headed by Abu Sofian, in the valley of Beder, which is situated near the sea, between Mecca and Medina. Mohammed's forces consisted of no more than 319 men, and the enemy's army of near 1000; notwithstanding which odds, he put them to flight, having killed seventy of the principal Koreish, and taken as many prisoners, with the loss of only fourteen of his own men. This first victory, although it may seem no very considerable action, was yet of great advantage to him, and the foundation of all his future power and success; for which reason it is very famous in Mohammedan history, and is frequently vaunted of in the Koran as an effect of the Divine assistance, through the miraculous interposition of the Angel Gabriel. The gaining of the battle was, however, wholly attributable to the extraordinary stratagem of Mohammed, by his expedient, at the critical moment, of scattering a handful of dust against his enemies, at the same time exclaiming, 'Let their faces be confounded!'—which action so invigorated his fainting followers, that they charged and overthrew their foes. Mohammed captured the whole caravan, which consisted of 1000 camels, richly laden, from Syria; and this afforded him the means of rewarding his followers, and inciting them to further exertion by the allurements of wealth and the hope of plunder.

Some reckon as many as twenty-seven expeditions wherein Mohammed was personally present, in nine of which he gave battle; besides several other expeditions, undertaken by his orders, in which he was not present. His forces he maintained partly by the contributions of his followers for this purpose, which he called by the name of *zacat*, or alms, and the paying of which he very artfully made one main article of his religious system; and partly by ordering a fifth part of the plunder to be brought into the public treasury for that purpose, in which matter he likewise pretended to be guided by the Divine direction.

In a few years, by the success of his arms, he considerably raised his prophetic character and power. In the sixth year of the Hejira, he set out with 1400 men to visit the temple of Mecca, not with any intention of committing hostilities, but in a peaceable manner. However, when he came to Al Hodeibiya, which is situated partly within and partly without the sacred territory, the Koreish sent to let him know that they would not permit him to enter Mecca unless he forced his way; whereupon he called his troops about him, and they all took a solemn oath of fealty or homage to him, and he resolved to attack the city; but those of Mecca, sending Arwa Ebn Masud, prince of the tribe of Thakif, as their ambassador, to desire peace, a truce was concluded between them for ten years, by which

any person was allowed to enter into league either with Mohammed or with the Koreish, as he thought fit.

Having subdued the chief part of the pagan tribes, and by his relentless severity exterminated the Jewish classes who dwelt peaceably in Arabia, in the seventh year of the Hejira (A.D. 628), he assumed the state of a sovereign, and sent embassies to the neighbouring monarchs, exhorting them to embrace Islamism.

In the eighth year of the Hejira, a quarrel, real or feigned, gave him the opportunity of possessing himself of Mecca, and of the sacred square edifice called the Caaba. Mohammed appearing suddenly at their gates with 10,000 men, before the troops of Mecca had even been apprised of his departure from Medina, they had no choice left but an immediate surrender or destruction. Thus pressed, and menaced with instant death, the Koreish submitted to the superior power of Mohammed. Their final submission to him, and their acceptance of his faith, were ratified subsequently on the hill El Safa. Having visited the holy building of the Caaba, and broken in pieces the idols wherewith it was encircled, Mohammed went in procession seven times round the building, and touched respectfully the black stone which was held sacred by the Arabs; then entering the edifice, he repeated the formulary, '*God is great.*' Afterwards he went to the well Zemzem—which is believed by them to be the same that the angel showed to Hagar—drank of the water, and performed the required ablution. Artfully blending attention to exterior observances with zeal, and pursuing a mixed system of mercy and rigour, he subdued the hearts of his high-minded countrymen, and soon superadded to his claims of power the more imposing and indissoluble bonds of superstitious reverence and awe. The capture of Mecca, and the submission of the powerful race of the Koreish, was soon followed by the conversion to Islamism of most of the remoter pagan tribes, until all Arabia bowed the neck beneath his yoke.

Mohammed, having thus become master of all Arabia, made great preparations for the conquest of Syria; but this vast enterprise was reserved for his successors. He gradually, however, paved the way for their successes, and brought the celebrated region of Arabia into one complete and powerful union. He established the law which still obtains in all the Mussulman states, of imposing a personal tax on such subjects as do not embrace Islamism. By this custom, still subsisting among all the sovereigns who acknowledge the Koran, every reputed infidel pays a *kharaj*, or capitation-tax, over and above the imposts which he supports equally with the rest of the subjects. He absolutely prohibited all idolators from making the pilgrimage to Mecca, or any foreigner from entering the Caaba, under pain of death. These were strokes of profound policy. He retained the pilgrimage to Mecca, which had been of ancient standing among the descendants of Abraham and Ishmael. Though he destroyed the images used at Mecca, as objects of idolatrous worship, he carefully retained the holy relics of the black stone and the supposed impression of Abraham's foot. The black stone had been immemorially venerated there; the angels, it was said, had brought it *white* to the Caaba, and the sins of mankind had transformed it to *black*. Hence, in allusion to this stone, the Orientals use the familiar compliments, 'May God whiten thy face!' 'May the shah make thy face white!' &c.

These practices no less forwarded the progress of Islamism than did the sword of Mohammed. Everywhere the petty Arabian tribes overthrew their idols, and submitted themselves to the new faith. Thus was Mohammedanism established, and idolatry rooted out, even in Mohammed's lifetime, throughout all Arabia; and the Arabs, being then united in one faith, and under one prince, found themselves in a condition for making those conquests which extended the Mohammedan faith over so great a part of the world.

In the tenth year of the Hejira (A.D. 631), Mohammed set forth on a solemn and pompous embassy to Mecca, accompanied by all his wives, and by at least 90,000 pilgrims. He sacrificed with his own hands sixty-three victims, and liberated sixty-three slaves, in thanksgiving for each year of his life; he shaved his head, and scattered the hair amongst the multitude, who eagerly seized portions of it, which they treasured as sacred relics. He closed the solemnity with the following apostrophe, which, as if pronounced from heaven, concludes the Koran:—'Henceforth, wretched and miserable shall they be who deny your religion. Fear not them, but fear me; this day I have perfected your religion, and completed my grace toward you. I have willed that Islamism be your religion.' He established the lunar movable year, still in use with the Mohammedans; and finally, as supreme Pontiff, or Imam, dismissed the people with a farewell, the last, as he declared, that he should give them; whence this pilgrimage derived its name of the Farewell.

Mohammed, having returned to Medina, now drew near the close of his extraordinary and fortunate career. His health had been for three years on the decline; but he had neither relaxed his duties nor his labours. Being at length affected with a mortal malady, he was conveyed to the house of his favourite wife, Ayesha, where he expired, in the eleventh year of the Hejira (A.D. 632), in the sixty-first year of his age. Of all his wives, the first alone bore him any children, of whom only his daughter Fatima, wife of Ali, survived him.

Having thus presented a sketch of the life of this remarkable man, we proceed to a notice of the religion which he founded. As already mentioned, Mohammed must be viewed chiefly in the light of an improver on the old modes of belief and practice of the Arabians; and his merit (if we may so call it) in this respect appears to have been, the combining of a variety of religious opinions into one form of faith, superadding an implicit belief in his own prophetical character, and enunciating the whole of his code in the writings of the Koran. At the period of his death, he bore the character both of a divinely-appointed vicegerent and of a secular prince, the latter being gained by his conquests; and his successors claimed the same double qualification. After the prophet's decease, the election of a successor occasioned considerable excitement, his father-in-law Abubeker, and his son-in-law and cousin Ali, each claiming the office of caliph. Abubeker was finally successful in the competition, and he, as is known to the readers of history, was succeeded by the ferocious Omar. Ali became the fourth caliph, but he was summarily cut off by poison; and from the long contests which afterwards occurred, it is difficult to say in what line the caliphate was ultimately settled.

The Koran, or prescribed record of the Mohammedan faith, consists of 114 chapters, each with a distinct title, but varying in length from a few sentences to several pages. No continuous subject can be said to run through the work, each chapter being in the form either of a separate revelation, or treating of a peculiar matter in faith, morals, or law. Among the titles to the various chapters we find the following:—The Cow; the Family of Imran; Women; the Spoils; Jonas; Joseph; Abraham; The Night Journey; The Cave; The Assembly; The News; Divorce; The Fig; The Resurrection, &c. The whole is a singular jumble of highly poetical passages, narratives characterised by great simplicity and beauty of style, garbled extracts from the Old Testament, and pious exclamations. The praise of the Almighty is a prevailing theme in all parts of the work, along with a deep inculcation of the principle that Mohammed is the greatest of all prophets who ever appeared on earth. The work certainly contains much that is excellent as respects moral admonition, but also a great deal that is incomprehensible and ludicrous. Mohammed did not live to complete his Koran in the shape we now see it. With the assistance, unquestionably, of a person versant in the Jewish Scriptures, he from time to time, as was suggested by passing circumstances, composed his fragments, which he declared to have been revealed to him from God by the Angel Gabriel; and these having been collected by his

followers, were, by succeeding caliphs, formed into a volume entitled, by way of pre-eminence, *Al Koran* (pronounced *Keoraan*), or The Book.

Whatever we may advance against the authority of the Koran, it is certain that it has been received by Mohammedans with a degree of reverence rarely witnessed among Christians towards the Holy Scriptures. In it they view the whole code of religious belief, civil law, and moral obligation. The belief which they generally profess, as drawn from the Koran, consists in the following leading points:—Religion is divided into two branches—faith and practice. Faith includes belief in God, in his angels, his revelations in the Koran, his prophets, the resurrection and day of judgment, and God's absolute decrees. Practice includes prayer, comprehending under this head the purifications necessary before prayer, alms-giving, fastings, and the pilgrimage to Mecca. The religion, as a whole, is called the religion of *Islam*, or *Islamism*. 'The word *islam*—we quote the Encyclopædia Americana—signifies an entire submission to the will of God, and thence the attaining of security, peace, and salvation. This act is performed, and these blessings are obtained, according to the doctrines of the Koran, by acknowledging the unity of God and the apostleship of Mohammed. Every man who makes this profession (*aslama*) is a *Moslem*—that is, one who has entirely given himself up to the will of God—and is on that account in a state of salvation (*salam*). As it happens that *Muslimani*, the dual of *Muslim*, is commonly substituted for the singular by the Persians and Turks, the words *Mussulman* or *Mussulmans*, has in those, as well as in European languages, now nearly superseded the shorter and more correct term.'

The notions of God and his attributes appear from the Koran to be just, and favourable to devotion. The belief in angels is, however, mingled with many singular fancies. They are believed to have been created by fire, to have pure and subtile bodies requiring no support, and that there is no distinction of sexes among them. The angels are supposed to have various forms and offices assigned to them; some adoring God, singing praises to him, or interceding for mankind, while others are engaged in writing down the actions of men, carrying the throne of God, and performing other services. The Mohammedans also believe that there are two guardian angels appointed to attend upon every human being, who observe and write down his actions, and who are changed every day.

There are four angels whom the Mohammedans believe to be more in the favour of God than any of the others. These are Gabriel, who is sometimes called the Holy Spirit and the Angel of Revelations, from his being employed in writing down the decrees of God; Michael, the friend and protector of the Jews; Azrael, the angel of death; and Israsil, who is to sound the trumpet at the resurrection. The devil, called in the Koran Eblis, is supposed to have been one of those favoured angels; but he fell, because he refused to worship Adam, with the other angels, at his creation. In the eighteenth chapter of the Koran, however, he is said to have been one of the genii, a species of beings whom the Mohammedans believe to be intermediate between angels and devils. The genii are said to have been created, like the angels, of fire, free from smoke; but, unlike the angels, they eat and drink, propagate their species, and are subject to death. Some are supposed to be good, and others bad. In the seventy-second chapter of the Koran, a company of the genii are described as believing in the doctrine of Mohammed, on hearing him read it.

With respect to the belief in prophets, the Koran inculcates the doctrine that God has at various times given revelations of his will to several prophets, whose books originally amounted to one hundred and four. Of these, ten were given to Adam, fifty to Seth, thirty to Enoch, ten to Abraham, and the other four to Moses, David, Jesus, and Mohammed. All these, except the four last, they believe to be lost; and that, after Mohammed, no other revelation may be expected. It appears that they have some prayers of Moses, Jonas, and others, a book called the Psalms, which consists of extracts from our version mixed up with other matter, and a history of Christ, said to be written by St Barnabas. In this book, Christ is made to predict the coming of Mohammed under the title of 'Famous,' that being the signification of his name in Arabic. According to tradition, there have been from time to time no fewer than 224,000 prophets sent into the world; and of these, 313 were apostles, charged with commissions to reclaim mankind from the infidelity into which they had fallen. Six of them—namely, Adam, Noah, Abraham, Moses, Jesus, and Mohammed—were sent especially to promulgate new laws or dispensations. The Mohammedans believe some of these apostles to have been superior to the others; to the last six, for instance, they give the first place. They believe them to have been free from great sins, although not perfectly pure, and that they all professed the same religion. In this list of prophets they introduce many whose names are mentioned in Scripture as patriarchs, such as Adam, Seth, Lot, &c. and also many others who are not mentioned in the sacred writings. But of all the prophets of God, the Koran enforces the leading doctrine that Mohammed is the greatest, and that his mission is to be believed in, under the most severe penalties. 'God will render of non effect the works of those who believe not, and who turn away men from the way of God; but as to those who believe and work righteousness, and believe in the revelation which hath been sent down unto Mohammed (for it is the truth from their Lord), he will expiate their evil deeds from them, and will dispose their heart aright. When ye encounter the unbelievers, strike off their heads, until ye have made a great slaughter among them; and bind them in bonds: and either give them a free dismission afterwards, or exact a ransom, until the warriors shall have laid down their arms. This shall ye do.'—Chap. xlvii. From numerous passages of this kind, the Mohammedans have framed the well-known brief enunciation of their belief—'There is no God but God, and Mohammed is his prophet,' a saying which is ever in their mouths, and may be called their popular creed.

Regarding the resurrection, the Mohammedans believe that, when a dead person is laid in the grave, he is received by an angel, who gives him notice of the coming of the two *Examiners*. These are two black angels, of a terrible appearance, named Mouker and Nakir. They order the dead person to sit upright, and examine him concerning his faith in the unity of God and the mission of Mohammed. If he answer correctly, his body is allowed to lie at rest, and is refreshed with the air of paradise; but if he appear sceptical, they beat him on the temples with iron rods, till he cries with anguish so loud as to be heard by all except men and genii. As to where the soul dwells after death, the Mohammedans seem to have a variety of opinions, which need not be particularised. Mohammedans are also divided as to the nature of the resurrection, some believing that it will be merely spiritual, others that the body only will be raised; but it is believed that all who have ever lived will appear for judgment. It is likewise believed that the irrational animals will be judged at the resurrection, and weak animals will take vengeance on the strong until satisfaction is given to the injured. The Koran enjoins kindness to all animals whatsoever, although it pronounces some to be unclean; and it is allowed that the conduct of Mohammedans in this respect far excels that of the generality of Christians.

It is supposed by the more orthodox Mohammedans, that the books wherein the bad actions of a man are registered will be put into one scale, and the good into another, and according as these preponderate, sentence will be given. After this will follow the satisfaction which every one takes of his fellow, or the retaliation made by them for the injuries they have received. The manner of giving this satisfaction will be to take away from one man a portion of his good works, and give it to one whom he has injured. 'Which being done,' says Mr Sale, 'if the angels say, Lord, we have given

to every one his due, and there remaineth of this person's good works so much as equalleth the weight of an ant, God will of his mercy cause it to be doubled to him, that he may be admitted into paradise. If, on the contrary, his good works be exhausted, and there still be some to receive satisfaction from him, God will order an equal amount of their sins to be heaped upon him, that he may be punished in their stead. The trials being over, and the assembly dissolved, the Mohammedans hold that those who are to be admitted into paradise will take the right-hand way, and those who are destined for hell-fire the left; but both of them must first pass the bridge called in Arabic *al Sirat*, which they say is laid over the midst of hell, and describe to be finer than a hair, and sharper than the edge of a sword.'

The Mohammedans believe hell to be divided into seven apartments, designed for the reception of different degrees of sinners. The first is destined to receive the wicked Mohammedans, the second for the Jews, the third for the Christians, and the rest for other sects and unbelievers. Over these will be placed nineteen angels, to whom the condemned will confess the justness of God's sentence, and beg them to intercede with him in their behalf. The punishment of infidels will be continued for ever, but wicked Mohammedans will be released after a certain period of suffering.

Before entering paradise, the righteous will drink at the pond of Mohammed, which is supplied with water from the rivers of paradise. 'It is described as a month's journey in compass, and whoever drinks of the water will thirst no more. It is a matter of keen dispute whether paradise is already created, many supposing that it will be different from the paradise in which Adam was placed. The more orthodox opinion, however, is, that it is the same, and that it was created before the world. It is supposed to be situated above the seven heavens, immediately under the throne of God, and is described as a place of surpassing beauty. The trunks of the trees are of gold, one of which, the tree of happiness, will yield all sorts of fruit for the consumption of true believers.

God's absolute decree and predestination of both good and evil, is a doctrine which Mohammed always took occasion to impress upon his followers. He said that God had not only predetermined the adverse or prosperous fortune of every person in the world, but also his faith or infidelity, which fate it is impossible by any foresight to avoid. By this doctrine, Mohammed taught his followers to have the greatest contempt for danger and suffering, which feeling was of material service to him in the propagation of his creed.

Of the four points of religious practice required by the Koran, prayer is the first. Mohammed included under this act purifications of the body, by total immersion at certain periods, and by washing the face, hands, and feet, at others. To make his followers punctual in the observance of these purifications, Mohammed declared that the practice of religion is founded on cleanliness, without which prayer would not be heard by God. A Mohammedan is obliged to pray five times in the twenty-four hours, at stated periods—before sunrise in the morning, when noon is past, in the afternoon before sunset, in the evening after sunset, and before the first watch of the night. Public notice is given of these periods by the *muezzins*, or criers, and every Mohammedan prepares himself for prayer. This he performs either in the mosque, or any other place, providing it be clean, after a prescribed form, and with a certain number of ejaculations, which he is on no occasion to abridge, unless when on a journey or preparing for battle. It is also necessary that he should kneel in a humble posture, and turn his face towards Mecca, as expressed in the second chapter of the Koran: 'Turn, therefore, thy face towards the holy temple of Mecca, and wherever ye be, turn your faces towards that place.' The direction of Mecca is pointed out within the mosque by a niche on the outside, by the situation of the doors and the steeple; and tables have been calculated for finding this out when they have no other guide. A Mohammedan is also obliged to lay off all costly parts of his dress before prayers, that he may not appear proud. Females are not allowed to enter the mosques along with the men, but they may visit them at other periods.

The prayers of the Mohammedans consist chiefly of pious exclamations, praising the greatness and goodness of God; and one of the more common of these prayers consists in a repetition of the first chapter of the Koran, called the *Fathat*, or Belief. It is in these words: 'Praise be to God, the Lord of all creatures; the most merciful, the King of the Day of Judgment. Thee do we worship, and of Thee do we beg assistance. Direct us in the right way, in the way of those to whom Thou hast been gracious; not of those against whom Thou art incensed, nor of those who go astray.'

Alms-giving is a necessary part of the religious practice of Mohammedans. These consist of cattle, money, corn, fruits, and wares which can be sold. At the end of the fast of the Ramadan, every Mohammedan is obliged to give in alms, for himself and for every one of his family, a measure of wheat, barley, dates, raisins, rice, or other provisions. 'The legal alms,' says Mr Sale, 'were at first collected by Mohammed himself, who employed them as he thought fit in the relief of his poor relations and followers, but chiefly applied them to the maintenance of those who served in his wars, and fought, as he termed it, in the way of God. His successors continued to do the same, till, in process of time, other taxes and tributes being imposed for the support of the government, they seem to have been weary of acting as almoners to their subjects, and to have left the payment of them to their consciences.'

Fasting is the third point of religious practice amongst the Mohammedans. It consists in abstaining from satisfying the appetites; in restraining the ears, eyes, tongue, hands, feet, and other members, from sin, and the fasting of the heart from worldly cares, and thinking of nothing but God. During the month of the Ramadan, Mohammedans are obliged to fast from the time the new moon first appears till the appearance of the next new moon. In this month they abstain from eating and drinking from daybreak till sunset; and this injunction they observe so strictly, that while they fast, they suffer nothing to enter their mouths or the other parts of the body, esteeming the fast broken if they smell perfumes, bathe, or even purposely swallow their spittle. The old and the sick are exempted from this fast; but in the case of the latter, when they recover, they must fast the allotted number of days. After sunset the people are allowed to refresh themselves—to eat, drink, and enjoy the company of their wives till daybreak. The more scrupulously devout, however, commence the fast again at midnight.

According to the injunctions of the Koran, every man is to perform a pilgrimage to Mecca once in his life, except prevented by poverty or ill health. It is clear that such an observance is altogether inapplicable to the condition and situation of the great bulk of the human race; and what is impossible in human practice, can never have been enjoined by the Creator. Mohammed, it is evident, only thought of Arabia and its neighbourhood, when he planned this idle ceremonial observance. Aware that, even within that limited district, his followers would have a difficulty in performing such a pilgrimage, he allows any one who is wealthy enough, to hire and send a deputy; many, we are informed, neglect this duty who cannot plead a lawful excuse. The temple of Mecca stands in the midst of the city, and is called the sacred or inviolable temple. Within it are said to be the tomb of Ishmael, and a remarkable black stone, which bears the mark of Abraham's foot. This temple was held in great veneration by the Arabians long before the time of Mohammed; some even say that it was built by Adam immediately after his expulsion from paradise. To this place pilgrimages are made from all parts where the Mohammedan religion is professed. A number having collected from any par-

ticular district, form themselves into a caravan for the purpose of mutual protection, which is very necessary from the number of bandit tribes who infest the route. The pilgrims meet at different places around Mecca, according to the direction in which they have come, and are obliged to be there by the beginning of the first month, called Dhulhajji.

'It is not,' says Mr Lane, 'by the visit to Mecca, and the performance of the ceremonies of circuiting the temple seven times, and kissing the black stone in each round, and other rites in the holy city, that the Moslem acquires the title of the *hadji* (pilgrim). The final object of the pilgrimage is Mount Arafat, six hours' journey from Mecca. During his performance of the required ceremonies at Mecca, and also during his sojourn at Arafat, and until his completion of the pilgrimage, the Moslem wears a peculiar dress called *ehhram*, generally consisting of two simple pieces of cotton, or linen, or woollen cloth, without seam or ornament, one of which is wrapped round the loins, and the other over the shoulders; the instep and heel of each foot, and the head, must be bare; but umbrellas are now used by many of the pilgrims. It is necessary that the pilgrim should be present on the occasion of a Khootbeh, which is recited on Mount Arafat in the afternoon of the 9th of the month Dhulhajji. In the ensuing evening, after sunset, the pilgrims commence their return to Mecca. Halting the following day in the valley of Mina, or Moona, they complete the ceremonies of the pilgrimage by a sacrifice (of one or more male sheep, he-goats, cows, or she-camels, part of the flesh of which they eat, and part give to the poor), and by shaving the head and clipping the nails. Every one after this resumes his dress, or puts on a new one, if provided with such. The sacrifice is called *el fida* (or the ransom), as it is performed in commemoration of the ransom of Ishmael by the sacrifice of the ram, when he was himself about to have been offered up by his father; for it is the general opinion of Mohammedans, that it was this son, and not Isaac, who was to have been sacrificed by Abraham.

The laws by which Mohammedans are governed are in a great measure derived from the Koran. Where this sacred book is silent, reference is made to the traditions of the prophet to direct the decisions of the judge. Regarding the Koran as a book of jurisprudence, we quote the following from the Library of Useful Knowledge:—'Nothing but the prejudices of education could make a reasonable man look upon the Koran as a book of jurisprudence capable of conveying instruction to any but a nation of savages. Deficient in form, deficient in clearness, incomplete, it possesses not one single quality requisite to a body of law. In the midst of a vast farrago of nonsense, hidden amidst unmeaning explanations and dark mysterious prophecies, there sometimes appears a command respecting the distribution of property or the punishment of offenders. But no explanations are given—no regular description of the means by which property may be acquired; no enumeration of those by which the rights to it may be lost, is even attempted. The rights of individuals, in their several capacities, to the services of others, are nowhere distinctly mentioned; nor is there the most distant approximation to any systematic view of the several obligations to which it was intended to subject the members of the community. As occasion prompted, or when a dispute happened, Mohammed was accustomed to issue a revelation, which answered for the immediate purpose. But the original unwritten customs of the Arabs remained in full force, receiving little modification from the decrees of the prophet. One advantage, and one alone, he may be supposed to have originated—his were *written* decrees; it was a commencement for a body of laws, though a rude and imperfect one. This benefit, however, is more than counterbalanced by the evil of their being irrevocable. What the ignorant barbarian instituted, succeeding generations have been obliged to retain. No matter how absurd, how injurious the decree, religion commands the faithful Moslem to abide by it. The Almighty was its author, and he is all-wise; and moreover is as wise at one time as another. How, then, shall we pretend to amend the divine ordination, or fancy that he himself need amend it? The conclusion is irresistible, provided the premises be allowed. The nations who have assumed the Moslem faith have consequently remained, and while they continue to profess it must remain, barbarians.'

One of the worst features of the Mohammedan faith is the degraded position which it assigns to women. This indeed forms a radical error in the constitution of society in Mohammedan countries, and must be removed before there can be a steady advance in rational improvement. Women are considered in every respect inferior to men. Few of them, even among the highest classes, receive any instruction; they are carefully secluded from public observation; assigned in marriage without their own consent, on payment of a trifling sum in form of dowry; and are divorced at pleasure—all which tends to debase their minds, and to produce the worst kind of social vices. Polygamy and legal concubinage add to the evils caused by such practices. The Koran allows a man to marry four wives, and to maintain as many concubine slaves as he may choose. He may divorce any of his wives at any instant which caprice or passion may suggest, merely by uttering the emphatic words, 'Thou art divorced!' and she must return to her parents or friends accordingly. He may take her again as a wife, and again divorce her; and even divorce her a third time, provided she has in the interval been married to and divorced from another man. Mr Lane, in his work on Egypt, says, that he has known cases in which men have, in the course of a few years, married as many as twenty or thirty wives; and also cases of women who had been married to a dozen or more men successively. In most instances, we are told, a man marries no more than one wife; but as these practices are common, we can easily judge of the depravity of manners which prevails in those countries professing the Mohammedan creed.

From the manner in which females are treated, it has been generally supposed by Christians that the Mohammedans believe that women have no souls. But this is a mistake. Women are believed to have souls, and are not to be excluded from paradise, though they are there to perform offices of a subservient nature. The meanest person in paradise, it is believed, 'is to have eighty thousand servants, and seventy-two wives of the girls of paradise, besides the wives he had in this world; that he is to inhabit a tent composed of pearls, jacinths, and emeralds; at meals he will be served in dishes of gold; and he is to be at liberty to drink freely of the wine of paradise, which will not intoxicate.' In such promises of felicity, we have a striking proof of the mean ideas of eternal happiness formed by the prophet, as well as of his knowledge of mankind.

The Koran forbids the use of wine or any intoxicating liquors; and this is among the best injunctions which it contains. Opium and other inebriating drugs are understood to fall within the line of prohibition, though not mentioned. The use, therefore, of either intoxicating drinks or drugs, is considered immoral in all Mohammedan countries. Mussulmans of all ranks are remarkable for their sobriety and temperance in food. The eating of swine's flesh is strictly prohibited; and indeed most animals forbidden to be eaten by the Mosaic law, are alike forbidden by that of Mohammed. All animals used for food must be killed by cutting their throat; and, in performing the operation, the butcher must say, 'In the name of God! God is most great!' Gambling is also prohibited; also usury, and the making of any images or pictorial resemblances of anything that has life. Perhaps the desire to extinguish idolatry influenced the prophet in laying down the last-mentioned law. Apostacy from Islamism is deemed a most heinous sin, and must be punished with death.

The Mohammedan creed enjoins no sabbath, like that of either the Jews or Christians, but selects Friday as a day in the week to be distinguished by more than

usual solemnity of devotion. Friday has been pitched upon, because it is said Adam was created on that day, and because the resurrection is prophesied to be on that day of the week. Perhaps a desire to avoid Saturday or Sunday, the days reverenced respectively by Jews and Christians, may also have influenced its adoption. Friday is called *El-Goomah*, or The Assembly; and on the forenoon of that day large congregations assemble in the mosques, when, in addition to the usual prayers, a sermon or address is delivered, and lessons read from the Koran, by the officiating imâms. After this service, all kinds of work go on as usual.

All religions, above the meanest paganism, have possessed a body of priests or functionaries, to whom the knowledge of the faith was confided, and by whom its precepts were enforced. Considering that Mohammed must have been conversant with the constitution and import of the Jewish priesthood, as laid down in the Levitical law, and also acquainted with the arrangements of the Christian church, it is remarkable that he instituted no order of clergy, but, on the contrary, left his religion to be professed by the people at large, without any distinction as to rank or qualification. On this account Mohammedanism has no priesthood, and cannot be said to constitute in any country what we understand by the term church. Wherever it is established as the religion of the community, *mosques* or chapels have been erected, generally by endowments from wealthy individuals; and these are individually under the charge of a warden, who is custodier of the revenues, and appoints the ministers of religion and inferior servants. 'Two imâms,' says Mr Lane, 'are employed to officiate in each of the larger mosques: one of them, called the *khateeb*, preaches and prays before the congregation on the Friday; the other is an *imâm ratib*, or ordinary imâm, who recites the five prayers of every day in the mosque, at the head of those persons who may be there at the exact times of those prayers: but in most of the smaller mosques both these offices are performed by one imâm. There are also to each mosque one or more *muezzins* (to chant the call to prayer), and *bowwabs* (or doorkeepers); and several other servants are employed to sweep the mosque, spread the mats, light the lamps, and attend the water-wheel by which the tank or fountain, and other receptacles for water, necessary to the performance of ablutions, are supplied. The imâms, and those persons who perform the lower offices, are all paid from the funds of the mosque, and not by any contributions exacted from the people. The condition of the imâms is very different, in most respects, from that of Christian priests. They have no authority above other persons, and do not enjoy any respect but what their reputed piety and learning may obtain them: nor are they a distinct order of men set apart for religious offices, like our clergy, and composing an indissoluble fraternity; for a man who has acted as imâm to a mosque, may be displaced by the warden of that mosque, and, with his employment and salary, loses the title of imam, and has no better chance of being again chosen for a religious minister than any other person competent to perform the office. The imâms obtain their livelihood chiefly by other means than the service of the mosque, as their salaries are very small, that of a khateeb being generally about a piastre (nearly 2½d. of our money) per month.'

'The Mohammedans,' continues the same authority, 'observe the utmost decorum in their public worship. Their looks and behaviour in the mosque are not those of enthusiastic devotion, but of calm and modest piety. Never are they guilty of a designedly irregular word or action during their prayers. The pride and fanaticism which they exhibit in common life, in intercourse with persons of their own or of a different faith, seem to be dropped on their entering the mosque, and they appear for the time wholly absorbed in the adoration of their Creator.'

Mohammedans have an extreme reverence for a green colour, which is used exclusively as the hue of turbans or other garments by those who claim hereditary descent from the family of the prophet. Europeans generally imagine the crescent to be a common symbol of Mohammedanism, as the cross is of Christianity; but we believe this is founded on mistake. The crescent, from a very early period, was a heraldic ensign of Byzantium or Constantinople, and has been appropriated by the Turks since their capture of that city.

The Mohammedans are generally affected with the most superstitious reverence for imaginary saints and 'favourites of God.' They imagine that idiots and lunatics are under the immediate inspiration of Heaven; and, unless these be dangerously mischievous, they are permitted all sorts of license. 'Most of the reputed saints of Egypt,' says Mr Lane, 'are either lunatics, idiots, or impostors.' Any one who is deranged by religious excitement becomes a *welee*, or an especial favourite of the Almighty, and is supposed to be gifted with supernatural powers. Almost every celebrated saint, deceased, is honoured by an anniversary birthday festival; and on occasion of these festivals, many persons visit the tomb of the saint, both as a duty and as a supposed means of obtaining a special blessing. Besides the various classes of saints, there are different orders of *durweeshes*, or dervises, some of whom subsist by begging, and others by performing at religious festivals; a few devote themselves to religious seclusion, and gain a character for exalted piety.

Mohammedanism, from shortly after the death of its founder, has been divided into two great parties or sects, who split upon the disputes concerning the Caliphate, or spiritual and civil supremacy, and received the name of *Sunnites* and *Shiites*. The Sunnites take their appellation from the *Sunna*, or collections of traditions relating to Islamism, which they believe to be of equal importance with the Koran. The term *Shiites* signifies heretics, which they are called by the opposite party, from their misbelief. The adherents of the doctrine that Ali, son-in-law of Mohammed, was properly his successor, reject the Sunna. The Turks are Sunnites, and the Persians are Shiites, and each hates the other with implacable animosity. The Sunnites, we believe, are reckoned the orthodox sect, and acknowledge the reigning sultan as the true successor of Mohammed.

Besides differing as to the credibility of the Sunna, and the successorship of the prophet, the Mohammedan world is divided into four minor sects—the *Hhanafees*, *Shafees*, *Malikees*, and *Hhambelees*, being so called from the respective doctors whose tenets they have adopted. 'The Turks,' says Mr Lane, 'are of the first sect, which is the most reasonable.' About the middle of last century, a great schism, or attempt at reformation, broke out in Arabia, headed by Mohammed, son of Abdel Wahab, a pious and learned sheikh. Young Mohammed claimed divine inspiration, and taught, like the Koran (the doctrines of which he but partially received), the existence of an only God, the Creator of the world, the rewarder of the good, and the punisher of the bad; but he rejected all the stories contained in the Koran, especially those concerning Mohammed, whom he considered merely a man beloved of God, but branded the worship of him as a crime directly opposed to the true adoration of the Deity. He also condemned the ornaments and splendour which are found in the mosques and the sepulchres of pretended saints. In short, he stripped Mohammedanism of all its trappings, and reduced it to little else than a pure Theism. All who should oppose this new doctrine were to be destroyed by fire and sword. His doctrines being adopted by some influential chiefs, spread with wonderful celerity, and the *Wahabees*, as his followers were called, shook the stability of the empire of the Turks in Asia. After a hot war of many years, the Wahabees were suppressed by Mehemet Ali, the late pasha of Egypt; but their doctrines are still far from being exterminated.

Of many of the extravagant superstitions connected or disconnected with religious belief, and which have prevailed both in ancient and modern times, a notice will be found in the following number.

SUPERSTITIONS.

Mankind have in all ages been prone to the most lamentable superstitions. The enlightened nations of antiquity were no more exempted from them than the most ignorant. The Jews, as we are repeatedly informed in Scripture, could with difficulty be restrained from idolatrous and superstitious practices, and confined to the worship and service of the only true God. This remarkable tendency of the Hebrew nation was in all likelihood caused by their sojourn for the space of four hundred years among the Egyptians, whose whole system of religion was a mass of idolatrous observances. They had a number of ideal gods, to whom they erected temples of prodigious size and architectural splendour; the principal of these deities were Osiris and Isis, which are thought to have been typical of the sun and moon. But they also offered worship to various animals, as the ox or bull (hence the golden calf of the Hebrews), to which they gave the name of Apis; the dog, the wolf, the hawk, the ibis or stork, the cat, and other creatures; they likewise paid adoration to the Nile, personifying it in the crocodile, to which temples were erected, and priests set apart for its service. The Egyptians, notwithstanding their learning (See History of Ancient Nations), also believed in dreams, lucky and unlucky days, omens, charms, and magic. In a word, they were grossly superstitious, and seem to have had but a feeble conception, if any, of the laws which regulate the ordinary phenomena of nature.

The Greeks and Romans possessed an equally insufficient idea of an omnipresent and omnipotent God, the creator and ruler of the universe. Their notions of divinity, like those of other Pagans, were grovelling and contemptible. The gods whom they adored were imagined to have been at one period rulers or heroes on earth, and still had their habitation somewhere within the Grecian territory, or at no great distance from it. Besides their belief in this vain mythology, both Greeks and Romans put faith in divination, oracles, the magical power of amulets, and dreams. Bees, ants, and various reptiles and beasts, were imagined to have the power of giving omens of good or bad fortune. The phenomena of the atmosphere and planetary bodies were likewise a fertile source of superstitious delusions; and so also were certain signs or marks on the intestines of victims slain as sacrifices at the altars. The mode of sacrificing in Greece is worthy of observation. Bulls, goats, sheep, pigeons, cocks, and other creatures, were immolated to the gods of the country. Sometimes there was a hecatomb, or sacrifice of a hundred animals at a time, to appease the manes or restless spirits of the deceased. A notion prevailed that the animals to be sacrificed would show signs of satisfaction on being brought to the altars, if the gods to whom they were offered felt pleased with the oblation. On bringing forward a bull or goat, the officiating priest drew a knife from the forehead to the tail, at which, if the victim struggled, it was rejected, as not acceptable to the gods; but if it stood quietly at the altar, then they thought the gods were pleased with it: yet a bare non-resistance was not thought sufficient, unless it gave its assent by a gracious nod. To try if it would nod, they poured water or barley into its ear. Being satisfied with the sign the priest proceeded to pour wine, and sometimes fruit and frankincense, between the horns of the victim, and afterwards struck it down, and bled it to death. Great dexterity was requisite in striking down and bleeding a victim; for if it did not fall at once upon the ground, or stamped, or kicked, or struggled to be loose, or did not bleed freely, or seemed to die with pain, it was thought unacceptable to the gods; all these being unlucky omens. To the celestial gods, sacrifices were made in the morning about sunrise; but to the deities of the lower regions, who were supposed to hate the light of day, they were made at midnight. It was customary on some occasions to dance round the altars whilst they sang the sacred hymns, which consisted of three stanzas or parts. The pouring out of libations of wine to the gods, and a thousand other follies, were perpetrated and believed. The appearance of comets and eclipses were ominous of great public disasters, it being the general belief that they were special signs made to warn mankind of approaching troubles; in all which we see a lamentable proof of the follies and weakness to which even a refined people may be exposed if ignorant of the laws of nature.

The superstitious delusions of the Greeks and Romans may be said to have died out at the final dismemberment of the Roman empire, and the overrunning of western Europe by the Gothic nations. The introduction of Christianity also tended powerfully to root out the old superstitious usages, though a few survived to a later date. For these reasons, the superstitions and matters of credulous belief which afterwards affected the people of northern and western Europe, including the British islands, were in a great measure of Scandinavian and Gothic origin.

SCANDINAVIAN SUPERSTITIONS.

The superstitions of the European Northmen, or Scandinavians—under which term are included the early inhabitants of Denmark, Norway, Sweden, and Iceland—were of a kind remarkably accordant with the cold and stern character of the regions which they occupied. Like the ancient Greeks, the Scandinavians had seats of the gods and of the blest, which they called Asgard and Walhalla (or Valhalla), and these bore the same relation in their character to the Olympus and Elysium of the Greeks, that the countries of the north, with their stormy climes, their icy mountains, and perilous waters, bore to the perfumed and verdant plains of Hellas, and the fair blue skies overhanging the smooth Ionian Sea. Nothing could afford better proof of the utterly fanciful nature of all these mythologies, than the fact, that they were thus modelled and modified in every case by the earthly habits, the wants and likings, the territorial position, and ignorance of geography and astronomy, of the individual tribes among whom they respectively originated.

The deification of one or more great princes or rulers seems to have constituted the basis of the Scandinavian, as well as of every other Pagan mythology. Odin, the supreme deity of the Scandinavians, and the ruler of heaven and earth, appears, like the Hellenic Jupiter, to have been a distinguished chief and warrior of early times. Although it is asserted by some that a divinity of the name of Odin was worshipped from the most remote ages, there is reason to believe that the worship of this personage, in the north at least, had its real origin a few centuries before the commencement of the Christian era, when a powerful chieftain of the name was driven by the Romans from his dominions between the Euxine and Caspian, and took refuge in Scandinavia, the whole of which he subjected to his sway. Like Mohammed, this chief appears to have established a new religion, of which he himself assumed to be the earthly head, as the servant or minister of a divine being of the same name. In the course of time, however, this distinction was entirely lost, and the persons and acts of the divine and earthly Odin became inextricably blended in the mythology and traditions of the north. The great records of the religious and legendary knowledge of the Scandinavians are the Eddas and Sagas of Iceland, partly written in poetry and partly in prose. The oldest of the Eddas, a series of poetical fragments, was col-

lected from oral tradition in the eleventh century, and the others are of later date. The acts of the deities and heroes of the north, their loves and wars, the creation of the world, and prophetic revelations, form the general subject of these pieces.

The Scandinavians, like the Greeks, believed that the universe was originally a chaos, or mass of confused vapours, peopled by a race of Rimthursar, or evil spirits of gigantic bulk. A being of nobler nature sprang up among these, named Buro, from whom were descended Odin and his two brothers Vile and Ve. These younger divinities followed exactly the same course with the northern giants that was pursued by Jupiter and his brothers with regard to the Titans, or older and gigantic deities of Greece. Odin began to war with the Rimthursar, and having at last overcome their great chief Ymer, he created the world out of that giant's body. His flesh became the mould, his bones the rocks, his hair the vegetable tribes, his blood the ocean, and his skull the heavens, at the four corners of which were placed certain dwarfs, called North, South, East, and West, whose duty it was to sustain the celestial dome. After this, the luminaries of the sky were set in their places, and the order of the seasons appointed. Natt (Night) wedded one of the Aser, or celestial family of Odin, and gave birth to Dag (Day). These deities travel alternately round the world in cars, drawn by single horses. Every great body, as in the Grecian mythology, was represented by a divinity. Frigga, or the Earth, was the daughter of Odin, and also became his wife. The inhabitants of the earth, or mankind, were created by Odin and his brothers. Two pieces of wood, the one of ash and the other of elm, formed the materials of the first pair of mortals, who were distinguished for personal beauty and intellectual ability.

The race of deities inhabited Asgard, a place supposed by some to have been the city in Asia whence the real or mortal Odin was expatriated. The fabulous Asgard was pictured as containing numerous palaces and halls, the largest of which was the Mansion of Joy, where Allfader (Odin) sat on his throne amid his divine family. This throne was named Lidskialfa, or the Terror of Nations, and from it he could overlook the whole earth. Two ravens, Hugin (Spirit) and Muninn (Memory), sat always at his ear, and communicated to him intelligence of all things that were going on in the universe. Among the deities who dwelt in Asgard, one of the most important was Thor, or Asathor, son of Odin by Frigga, and the Mars, or warrior-god, of the Scandinavians.

Thor is described as the god of thunder, and the strongest of beings, earthly or heavenly. He is the son of Odin and Frigga, or, in other words, of the Sun and the Earth. When he moves, the earth trembles. He holds in his hand a powerful hammer called the Crusher (*miölner*), with which he annihilates all who oppose him, and who offend the gods. In battle, Thor is always girt with a magic girdle, which has the power of inspiring him with a divine fury, and redoubling his strength. On his right hand he wears an iron gauntlet, with which he grasps and wields the formidable crusher. This latter instrument was forged by a dwarf named Sindri, the prototype of the deformed blacksmith-deities of the Greeks, Vulcan and his Cyclops. The hammer possesses the wonderful power of never missing its aim, and when launched at any object, returns to the hand of Thor, after having destroyed his foe. Thor is sometimes called Aukistor, or Thor of the Car, from his riding on a chariot, drawn by two powerful he-goats, named Sangniostr and Tangrisner. This deity has a spouse named Sipia, famous for her beautiful hair.

After Odin, Thor was the most cherished deity of Scandinavia, and had statues and temples erected to him everywhere. The statues of him were usually formed of clay, and represented a tall figure, with a red-painted beard, indicative of the lightning which he was supposed to wield. Bread and meat were supplied daily to the god by his worshippers, and at stated times libations were poured out in his honour.

Balder, the second son of Odin, was the most beautiful and amiable of the Aser, or gods. Unlike the rest of his brethren, he was fond of peace, and had the power of allaying tempests, and acting as a mediator, to avert divine wrath. His decrees were irrevocable. In some points he resembled the Apollo of the Greeks, but the general qualities of that personage found a closer representative in Braga or Bragi, the god of eloquence and poetry. Niord, the god of the sea, and his son Freys, the god of rain, were also important deities of the north. Every element, or important natural phenomenon, was under the guidance, in like manner, of some celestial personage. Frigga, the Scandinavian Juno, was the bestower of fertility and plenty. Freia, or Freya, the daughter of Niord, was the Venus of Asgard and the patroness of matrimony. Freia was assisted in her duties by Siona and Sofna, the first of whom made lovers faithful, while the other reconciled them when they quarrelled. Eyra was the physician of the gods. There were various other minor divinities in the Scandinavian mythology, though not nearly so many as in the Grecian roll. The deficiency was made up among the northerns by the assignment of more multitudinous duties to the greater deities. Thus Odin, from the extent of his government, received as many as one hundred and twenty distinct names, each indicating some individual quality ascribed to him.

The great hall appointed for the reception of the spirits of the brave, when they left earth for the seat of the gods, was called Valhalla. Twelve beautiful, yet terrible nymphs, named Valkyries (*choosers of the slain*), were the guides of the good spirits to the hall of Valhalla, and supplied them with mead. The occupation of drinking this northern nectar, and of eating the fat of the wild boar Serimner—which, after serving as the daily food of thousands, became whole again every night—filled up all those intervals of time in Valhalla that were not passed in fighting. None but those who had shown surpassing bravery on earth were admitted into this Scandinavian paradise; and when there, their daily amusement was to fight with one another till all, or nearly all, were cut in pieces. But little harm was done in this way, for the spiritual bodies soon reunited, and enabled the warriors to appear, entire in lithe and limb, at the feasts that followed these extraordinary engagements. The skulls of enemies were the drinking-cups used at the entertainments of Valhalla, and the guests are described as being almost perpetually in a state of inebriation. It was only when the cock announced the arrival of morning that these terrible heroes arose from table, to issue to the field of battle through the five hundred and forty gates of Valhalla, and hack each other to pieces anew. Such was the never-ending round of employment destined for the departed heroes of Scandinavia.

The mythology of the Scandinavians survived till a much later date than any other system of heathen worship in Europe. It was not abolished till the eleventh century. St Olaf, king of Norway, and a zealous supporter of Christianity, usually receives the credit of having overturned this most barbarous form of religion. In the course of his efforts to Christianise his subjects, he ordered a statue of Thor, and the pedestal on which it stood, to be broken in pieces, and showed the people that the meat which had been laid down for the use of the god was not eaten by him, but by a host of rats and other vermin that had formed a lodgment about the foundation of the colossal image. Whatever might have been the influence of the mythology of the Scandinavians in Britain, it disappeared shortly after its overthrow on the continent of Europe, or only lingered in a kind of traditional existence amidst the remote islands of Orkney and Shetland, till finally banished by the progress of a more general intelligence. The dread names of Odin, Thor, and other deities of the north, who for centuries weighed down the human faculties, and kept up the reign of superstition, are now only perpetuated in the appellations affixed to some of the days of the week. Thus

our term *Wednesday* is derived from Odin's or Wodin's day, that being the day of the week in which the northern Jupiter, or supreme ruler of the gods, was most honoured and worshipped. *Thursday* is from Thor, the second in dignity among these fabulous deities: as this day was called Dies Jovis by the Romans, we have here a confirmation that Thor the thunderer was equivalent either to Mars, or the thundering Jove of the Grecian mythology. *Friday* takes its appellation from Freya, the daughter of Niord, and corresponds with the Dies Veneris, or Venus day of the Greeks and Romans. *Saturday* is derived in the same manner from the god Saeter of the Scandinavians, and Saturn of the Greeks. *Tuesday*, or anciently Tiesday (a pronunciation still preserved in Scotland), is supposed to be from Tisa, the wife of Thor, and the reputed goddess of justice. *Sunday* and *Monday* were respectively named from the Sun and Moon, both by the northern and southern nations of Europe, from a remote period of time. The circumstance of there being such a marked resemblance between the characters of the deities whose names were employed to distinguish the same days of the week both by Greeks and Scandinavians, is not a little remarkable, and has never, as far as we know, been the subject of explanation by philologists or antiquaries. The fact is only certain, that the names of the days of the week now used by every civilised people, are founded upon the mythological observances of either the Grecian or the Scandinavian races.

ANGLO-SAXON SUPERSTITIONS.

At a comparatively early era, the mythology and minor superstitions of the Scandinavians, as well as the follies of Druidism, disappeared in Britain as the familiar superstitions of the Anglo-Saxon race became predominant. Like the Scandinavians of the north, the Anglo-Saxons deduced their descent from Odin, whom they worshipped along with Thor, Freya, and other imaginary deities of the Gothic people. They also worshipped idols emblematic of the sun, moon, earth, and various seasons and circumstances. In particular, they sacrificed to one goddess called Eostre, in the month of April, and her name still expresses the festival of *Easter* in the Christian church. In token of devotional feelings towards the sun, they solemnised a festival to that luminary on the day of December in which the days began to lengthen, a log of wood being burnt on the occasion, as an emblem of returning light and heat. From this ancient practice, therefore, may be traced the custom of burning the Yule log at Christmas, which is still continued in many parts of England. Among the Anglo-Saxon superstitions was included a belief in giants, dwarfs, and elves, all of a spiritual order, but partaking in some degree of human attributes and feelings. In the term *elfi* or *elves*, we have one of the earliest traces on record of those ideal fairy tribes who afterwards figured in the familiar superstitions of the British islands. The Gothic nations, of whom the Anglo-Saxons were a branch, had various orders of elves, who were understood to haunt the fields, the woods, mountains, and waters, and received denominations accordingly, as field-elfin, dun-elfin, &c. Whether this varied race of spirits originated in the East, whence so many superstitions spread into ancient Europe, is not satisfactorily known, although it is probable that they did, and were of the same genus as the *peri* of the Persians, a being not dissimilar in character to our fay or fairy. Both in the Scandinavian and Anglo-Saxon superstitions, elves formed an important order of beings, not unlike in character to the demi-gods, naïads, dryads, and other imaginary spirits of the Greek and Roman mythologies, and, like them, exerted a certain influence over human affairs.

Besides a belief in these mysterious elfin tribes, the Anglo-Saxons brought with them to England the still darker and more dangerous doctrines of witchcraft and divination, before which the reasoning powers of the people quailed, and all intellectual advancement was impeded. The general introduction of Christianity about the year 600, abolished, as a matter of course, the grosser Pagan observances, but failed to extirpate the more familiar and less obvious superstitions of the people. Witchcraft, wizardry, magic, divination, preparations of charms, and other mystic follies having no foundation in truth, continued to flourish, although opposed both by the more intelligent clergy and the kings. It is from the statutes, indeed, which Alfred, Canute, and other monarchs passed for the prevention of magical practices, that we chiefly know their nature and extent. *Wiglaer*, a wizard, and *wicca*, a witch, are persons severely denounced. Penalties are enjoined if any one should destroy another by *wiccecraeft*. They appear to have used philters; for it is declared a crime in any one to use witchcraft, or potions to produce another's love. Canute enjoins his people not to worship fire or floods, wells or stones, or any sort of tree; not to frame death-spells, either by lot or otherwise; and not to effect anything by phantoms. Wizards, we also learn, pretended to the power of letting loose tempests, and controlling the visible operations of nature.

The introduction of Christianity, as has been mentioned, failed to dissipate the familiar superstitions of the English; a circumstance which can excite no surprise, as no pains were taken to enlighten the understandings of the people, or make them acquainted with the true causes of natural phenomena. We accordingly find that from the seventh to the sixteenth century the belief in demons, spirits, lubber-fiends, and elves, of every shade and character, prevailed without intermission, and with no further challenge from the clergy than as being individually manifestations of the devil, on whom now the whole load of superstition was based. One goblin in particular formed the theme of innumerable legends. What was his name originally in continental Europe, whence he emigrated with the Anglo-Saxons, is of little consequence; in England he became known by the title of Father Rush, from a belief that he had on one occasion personated a monk or friar, and, to serve his own malignant purposes, had in that capacity long imposed on a religious brotherhood; afterwards, this appellation went out of repute, and he was popularly known and feared by the familiar name of Robin Goodfellow, and performed many useful services in the rural districts. It is not a little strange that both monks and clergy sanctioned these fancies, and increased their number by the propagation of legends, which we venture to say could not now receive the approbation of a single individual, lay or clerical, in England. Of these it is only necessary to mention the absurd stories which were fabricated and circulated respecting Dunstan, abbot of Glastonbury, and afterwards archbishop of Canterbury, who died in the year 988. When a boy, he is stated to have studied theology so sedulously as to reduce him to the point of death, when he was suddenly restored by some divine medicine sent to him by an angel in a storm. So extraordinary a circumstance could not but demand grateful thanksgivings, and Dunstan started from his bed, and ran with full speed towards the church. Satan met him in the way, surrounded with numerous black dogs, and endeavoured to defeat his pious intention. But Dunstan was not to be overcome; he instantly prayed for ability, and was enabled to cudgel the devil and his black dogs so effectually, that they left him and the angel together; the latter of whom, finding the church door fastened, took up the pious youth in his arms, and conveyed him to his devotions through the roof. Another time the devil attempted to intrude himself upon St Dunstan's studies in his laboratory; but the saint speedily punished his impertinence, by taking from the fire his tongs, which were red hot, and with them seized the nose of the fiend, who was thereupon glad to make his escape. It is lamentable to think how such vain imaginations should have so long weighed upon the understandings of the people, and engrafted a habitual dread of the supernatural, which till this day exerts an influence over the untutored mind.

Fairies.

Among the various supernatural beings to whom the ignorance and credulity of mankind have given an imaginary existence, the fairies occupy a prominent place, and are especially worthy of notice. The characters of different classes of spirits have become so mingled and confounded together in the lapse of time, that it is difficult to define individual species with correctness and precision; but there is one characteristic which appears to distinguish the fairy from every other being of a similar order. Most spirits could contract and diminish their bulk at will; but the fairy alone seems to have been regarded as essentially small in size. The majority of other spirits, also, such as dwarfs, brownies, and the like, are represented as deformed creatures, whereas the fairy has almost uniformly been described as a beautiful miniature of the human being, perfect in face and form. These points of distinction, with a dress of pure green, are the principal features which serve to mark the personal individuality of the fairies as a supernatural race.

The origin of the fairy superstition is ascribed by most writers to the Celtic people; but the blending of the Gothic tribes with the Celts led to the admixture of many attributes of the northern spirits with those proper to the fairies. Thus the latter race, which appears to have been intrinsically good and benevolent, has been gifted with attributes of the very opposite kind, borrowed from the trolls and elves of the north. In Scotland, and other countries where the Celtic traditions predominated, the fairies retained in part the original and better features of their character, and were usually called the Good Neighbours, or the Men of Peace; but even there their character was deteriorated by a considerable leaven of elfin or dwarfish malignancy. This evil part of their nature caused much annoyance to mankind, and more especially their propensity to the kidnapping of human beings. Unchristened infants were chiefly liable to this calamity, but sometimes adult men and women were also carried off. The reason for these abductions is to be found, according to the authorities on this subject, in the necessity which the fairies lay under of paying 'kane,' as it was called, to the master-fiend; or, in other words, of yielding up one of their number septennially into his hands by way of tribute. They greatly preferred on such occasions to make a scape-goat of some member of the human family. They also carried off young married women to be nurses to their infants; and in Ireland, at this day, when a young woman falls a victim to puerperal disease, the more ignorant of the country people assert that she has been removed for this purpose.

The necessity for the latter kind of kidnapping shows the fairies to have been *family* people. They are always represented as living, like mankind, in large societies, and under a monarchical form of government. The Salique law seems to have had no countenance among them; for we more often hear of fairy queens than of fairy kings, though both are frequently spoken of. The Land of Faërie was situated somewhere under ground, and there the royal fairies held their court. In their palaces all was beauty and splendour. Their pageants and processions were far more magnificent than any that Eastern sovereigns could get up, or poets devise. They rode upon milk-white steeds. Their dresses, of brilliant green, were rich beyond conception; and when they mingled in the dance, or moved in procession among the shady groves, or over the verdant lawns of earth, they were entertained with delicious music, such as mortal lips or hands never could emit or produce. At the same time most of the legendary tales on the subject represent these splendours as shadowy and unsubstantial. When the eye of a seer, or any one gifted with supernatural powers, was turned upon the fairy pageantries or banquets, the illusion vanished. Their seeming treasures of gold and silver became slate-stones, their stately halls became damp caverns, and they themselves, from being miniature models of human beauty, became personifications of fantastic ugliness. In short, the Fairy Eden was a day-dream—a thing of show without substance.

This is the general account given of the fairy state, but few of the legends on the subject agree on all points. From a very early period, however, every fairy annalist concurred in giving to the king and queen of the fairies the names of Oberon and Titania. Oberon is the Elb-rich, or Rich Elf, of the Germans, and was endowed with his modern name, as well as with new attributes, by the old French romancers, who represented him as a tiny creature of surpassing loveliness, with a crown of jewels on his head, and a horn in his hand that set all who heard it to the dancing.

It was the belief that unchristened children were peculiarly liable to be carried off by the fairies, who sometimes left little changelings of their own blood in place of the infants of mortal kind. Ben Jonson, in his 'Sad Shepherd,' makes the tending and nurture of human changelings to be one of the favourite elfin employments:—

> 'There, in the stocks of trees, white fays do dwell,
> And span-long elves, that dance about a pool,
> With each a little changeling in their arms.'

Various charms were used in Scotland for the restoration of stolen children. The most efficacious was believed to be the *roasting* of the supposititious child upon live embers, when it was understood that the false infant would disappear, and the true one be left in its place. It is to be hoped that this cruel and monstrous practice was seldom followed. The possession of what are called *toadstones* was also held to be an efficient preservative against the abduction of children by the fairies. In Waldron's 'Account of the Isle of Man' we find various stories of children kidnapped by the fairies. In one case, where a woman had given birth to a child, her attendants were enticed from the house by a cry of 'Fire!' and while they were out, the child was taken from the helpless mother by an invisible hand; but the sudden re-entry of some of the gossips compelled the fairies to drop the child, and it was found sprawling on the threshold. The fairies, who seemed to have taken a particular liking to this woman's offspring, tried to carry off her second child in the same way; but failed again. On a third trial they succeeded, and left behind them a changeling, a withered and deformed creature, which neither spoke nor walked during an existence of nine years, and ate nothing but a few herbs. It is to be feared that this changeling superstition must have been the cause of much deplorable cruelty. That very member of a family who, from natural misfortunes and defects, required the kindliest tending, would but too often be neglected and wretchedly misused, on the plea of its being an alien. We may smile at many of the credulous fancies respecting the fairies; but there are in this order of superstitions, as in almost all others, some points which strongly exhibit to us the baleful effects inevitably attendant upon ignorance of every kind.

Numberless stories of a ridiculous kind have been told relative to the intercourse of the fairies with mankind. Some of the poor creatures arraigned in Scotland in past times for witchcraft, admitted having had correspondence with the fairies. There can be little doubt that these wretched beings, whom the *torture* forced into the confession of *some* kind or other of supernatural traffic, were induced to admit an association with fairies, in the hope that this would be looked upon as less sinful than a league with the enemy of mankind. The trials of Bessie Dunlop and Alison Pearson, in the years 1576 and 1588, illustrate this statement. Bessie Dunlop avowed that her familiar was one Thome Reid, the ghost of a soldier slain at Pinkie in 1547, and who after his death seems to have become an inmate of Elf-land. She related that this Thome Reid, who appeared frequently to her in the likeness of an elderly man, gray-coated and gray-bearded, wished her to go with him to

the fairy country, and gave her herbs to cure various diseases. He even once brought to her the queen of the fairies, who, to the confusion of poetry, was a fat woman, fond of ale, and, in short, most unlike the Titania of romance. Alison Pearson also admitted her familiarity with the fairies, from whom she frequently received herbs for the cure of disease. It is remarkable that Patrick Adamson, an able scholar and divine, who was created archbishop of St Andrews by James VI., actually took the medicines prescribed by this poor woman, in the hope that they would transfer an illness with which he was seized to the body of one of his horses. This feat, it was believed, was accomplished by the supernatural prescription. The unfortunate women who confessed to these things, were deceived in the expectation which led to the act. They could not so save themselves: they were both convicted, and perished at the stake.

It may not be improper in this place to allude to the fancies of the poets on the subject of the fairies. Shakspeare stands pre-eminent in this department. His 'Midsummer Night's Dream' is a poem of exquisite beauty, and one corresponding in every respect with the delicately-fanciful nature of the subject. In 'Romeo and Juliet' he has also described an important fairy, Queen Mab, who has almost dethroned Titania of late years. Mr Tennant's 'Anster Fair' has been of great avail to the fame of Mab. Whoever chooses to consult Drayton and the poets mentioned, will have the pleasure of observing and enjoying the exercise of poetical fancy of the highest order on the subject of fairies.

The superstitions now described are not yet extinct in the British Islands. In Ireland, the Scottish Highlands, and Wales, in particular, the fairies are yet objects of common belief. Education has not yet shed its enlightening influence there, and by education alone can the darkness of superstition be dispelled. This is almost a truism; for superstition and ignorance are nothing else than equivalent terms. The spirit is abroad, however, which will extinguish this remnant of barbarism, and it is consoling to think so, for the ills which have flowed from this source are numberless.

WITCHCRAFT.

A belief that certain individuals possessed magical powers, and could exercise a supernatural influence over their fellow-creatures, existed in ancient Rome, and those who practised, or rather *pretended* to exercise, such arts, were punishable by the civil magistrate. It is to be observed that neither among the Romans nor the Pagan nations of northern Europe, was witchcraft deemed an offence against *religion;* in some instances, indeed, the witch was supposed to derive her powers from spirits friendly to mankind, and her profession, though feared, was held in honour by her infatuated dupes. Upon the introduction of Christianity, witchcraft assumed a new form, though retaining all its old attributes. Instead of ascribing the supernatural powers of the practitioner to the gods, to Odin, to spirits of good or evil qualities, or to supposed mysteries in nature, the people imputed them to the great fallen spirit mentioned in Scripture. This potent being, from a wicked desire to destroy all that was good and hopeful in man's destiny, was believed to enter into a compact with the aspirant witch, in which, for an irrevocable assignment of her soul at death, he was to grant all her wishes, and assist in all her malevolent projects. These new features in witchcraft, as we shall speedily perceive, thoroughly changed and prodigiously extended the superstition throughout Europe. From being rather a sportive kind of jugglery, or trick in practical magic, and at most only a civil offence, it was now recognised as a crime of the deepest dye, meriting the most severe chastisement which the ecclesiastical and civil power could inflict.

We must here notice, however, that the demon or master-fiend of the witchcraft legends was a very different being from that great fallen spirit, held, in a graver view of things, so deeply to influence the best interests of humanity. As this superstition gained force in the Christian world, which it did by slow and successive steps through the whole of the middle ages, or from the fifth century till about the fifteenth, the devil—for it is impossible to avoid the mention of this emphatic name, disagreeable as it is commonly said to be to ears polite—gradually lost many of the former features of his character; or, rather, a different being was substituted for him, combining the characteristics of the Scandinavian Lokke with those of a Satyr of the heathen mythology—a personage equally wicked and malicious as the sterner spirit of evil, but rendered ludicrous by a propensity for petty trickery, and by such personal endowments as a pair of horns, a cow's tail, and cloven feet. There can be no doubt that the demon of the middle ages borrowed these attributes from his human representatives in the old mysteries and plays, where a laudable endeavour was made to make the evil one as ugly as possible. We are told, it is true, that he could at will assume any specious disguise that suited him, but the eye of the initiated observer could readily detect the 'cloven foot'—or, in other words, penetrate his true character. Such as he was, he played an important part in the annals of modern witchcraft, which was supposed to rest entirely on the direct and personal agency of himself and the imps commissioned by him. Nor was this supposition confined to the illiterate, or to persons of peculiarly credulous temperament. Authors, distinguished for sense and talent, record with great seriousness that the devil once delivered a course of lectures on magic at Salamanca, habited in a professor's gown and wig; and that at another time he took up house in Milan, lived there in great style, and assumed, rather imprudently one would say, the suspicious, yet appropriate title of the 'Duke of Mammon.' Even Luther entertained similar notions about the fiend; and in fact thought so meanly of him, as to believe that he could come by night and steal nuts, and that he cracked them against the bedposts, for the solacement of his monkey-like appetite.

The powers ascribed to this debased demon were exceedingly great. The general belief was, that through his agency storms at sea and land could at all seasons be raised; that crops could be blighted, and cattle injured; that bodily illnesses could be inflicted on any person who was the object of secret malice; that the dead could be raised to life; that witches could ride through the air on broomsticks, and transform themselves into the shapes of cats, hares, or other animals, at pleasure. An old writer, speaking of the powers of witches, says—'1. Some work their bewitchings only by way of invocation or imprecation. They wish it, or will it; and so it falls out. 2. Some, by way of emissary, sending out their imps, or familiars, to crosse the way, justle, affront, flash in the face, barke, howle, bite, scratch, or otherwise infest. 3. Some by inspecting, or looking on, or to glare, or peep at with an envious and evil eye. 4. Some by a hollow muttering or mumbling. 5. Some by breathing and blowing on. 6. Some by cursing and banning. 7. Some by blessing and praising. 8. Some revengefully, by occasion of ill turnes. 9. Some ingratefully, and by occasion of good turnes. 10. Some by leaving something of theirs in your house. 11. Some by getting something of yours into their house. 12. Some have a more speciall way of working by severall elements—earth, water, ayre, or fire. But who can tell all the manner of wayes of a witch's working; that works not only darkly and closely, but variously and versatilly, as God will permit, the devil can suggest, or the malicious hag devise to put in practice?'

In the present age of comparative intelligence, it is difficult to understand how human beings could be so deplorably ignorant as to entertain such a gross superstition. We must, however, recollect that the belief was greatly fostered by religious impressions, and that it was long considered a mark of impiety to doubt the existence of witches. Various other circumstances helped to cherish and magnify the error. The true causes of the majority of natural phenomena were

unknown. The nature of the atmosphere, and of certain meteoric appearances—of the laws which regulate storms at sea, and tides—of human maladies and their remedies—were enveloped in obscurity. Natural causes being unknown, and the very doctrine of them unacknowledged, the weak and easily-terrified mind flew to the conclusion that all evil proceeded from a power malignant to man, and that, by certain impious dealings, it was possible for man himself to direct that power against his neighbour.

The superstition seems to have approached its height about the end of the fifteenth century. In his bull of 1484, Pope Innocent charged inquisitors and others to discover and destroy all such as were guilty of witchcraft. This commission was put into the hands of a wretch called Sprenger, with directions that it should be put in force to its fullest extent. Immediately there followed a regular form of process and trial for suspected witches, entitled *Malleus Maleficarum*, or a Hammer for Witches, upon which all judges were called scrupulously to act. The edict of 1484 was subsequently enforced by a bull of Alexander VI. in 1494, of Leo X. in 1521, and of Adrian VI. in 1522—each adding strength to its predecessor, and the whole serving to increase the agitation of the public mind upon the subject. The results were dreadful. A panic fear of witchcraft took possession of society. Every one was at the mercy of his neighbour. If any one felt an unaccountable illness, or a peculiar pain in any part of his body, or suffered any misfortune in his family or affairs, or if a storm arose, and committed any damage by sea or land, or if any cattle died suddenly, or, in short, if any event, circumstance, or thing occurred out of the ordinary routine of daily experience, the cause of it was witchcraft. To be accused was to be doomed; for it rarely happened that proof was wanting, or that condemnation was not followed by execution. Armed with the Malleus Maleficarum, the judge had no difficulty in finding reasons for sending the most innocent to the stake. If the accused did not at once confess, they were ordered to be shaved and closely examined for the discovery of devil's marks; it being a tenet in the delusion that the devil, on inaugurating any witch, impressed certain marks on her person; and if any strange mark was discovered, there remained no longer any doubt of the party's guilt. Failing this kind of evidence, torture was applied, and this seldom failed to extort the desired confession from the unhappy victim. A large proportion of the accused witches, in order to avoid these preliminary horrors, confessed the crime in any terms which were dictated to them, and were forthwith led to execution. Other witches, as has been said, seemed to confess voluntarily, being probably either insane persons, or feeble-minded beings, whose reason had been distorted by brooding over the popular witchcraft code. A few extracts from the work of Dr Hutchinson will show the extent of these miserable proceedings:—

'A. D. 1485.—Cumanas, an inquisitor, burnt forty-one poor women for witches, in the county of Burlia, in one year. He caused them to be shaven first, that they may be searched for marks. He continued the prosecutions in the year following, and many fled out of the country.

About this time, Alciat, a famous lawyer, in his *Parergu*, says, "One inquisitor burnt a hundred in Piedmont, and proceeded daily to burn more, till the people rose against the inquisitor, and chased him out of the country."

A. D. 1486.—A violent tempest of thunder and lightning in Constance destroyed the corn for four leagues round. The people accused one Anne Mindelin, and one Agnes, for being the cause of it. They confessed, and were burnt.

About this time H. Institor says, one of the inquisitors came to a certain town that was almost desolate with plague and famine. The report went that a certain woman, buried not long before, was eating up her winding-sheet, and that the plague would not cease till she had made an end of it. This matter being taken into consideration, Scultetus, with the chief magistrate of the city, opened the grave, and found that she had indeed swallowed and devoured one-half of her winding-sheet. Scultetus, moved with horror at the thing, drew out his sword and cut off her head, and threw it into a ditch, and immediately the plague ceased! and the inquisition sitting upon the case, it was found that she had long been a reputed witch.

A. D. 1524.—About this time a thousand were burned in one year, in the diocese of Como, and a hundred per annum for several years together.'

From other authorities it is learned that the devastation was as great in Spain, France, and northern Germany, as it was in the Italian states. About the year 1515, five hundred witches were burned in Geneva in three months, and in France many thousands. An able writer in the Foreign Quarterly Review (No. XI. 1830), sums up the following particulars respecting the executions for witchcraft in some of the German states:—

'In Germany, to which indeed the bull of Innocent bore particular reference, this plague raged to a degree almost inconceivable. Bainberg, Paderborn, Wurtzburg, and Treves were its chief seats, though for a century and a-half after the introduction of the trials under the commission, no quarter of that great empire was free from its baneful influence. A catalogue of the executions at Wurtzburg for the period from 1627 to February 1629, about two years and two months, is printed by Hauber in the conclusion of his third volume of the Acta et Scripta Magica. It is regularly divided into twenty-nine burnings, and contains the names of 157 persons, Hauber stating at the same time that the catalogue is not complete. It is impossible to peruse this list without shuddering with horror. The greater part of this catalogue consists of old women or foreign travellers, seized, as it would appear, as foreigners were at Paris during the days of Marat and Robespierre: it contains children of twelve, eleven, ten, and nine years of age; fourteen vicars of the cathedral; two boys of noble families, the two little sons of the senator Stolzenburg; a stranger boy; a blind girl; Gobel Babelin, the handsomest girl in Wurtzburg, &c. And yet, frightful as this list of 157 persons executed in the short space of two years appears, the number is not (taking the population of Wurtzburg into account) so great as the Lindheim process from 1660 to 1664; for in that small district, consisting at the very utmost of 600 inhabitants, thirty persons were condemned and put to death, making a twentieth part of the whole population consumed in four years.

How dreadful are the results to which these data lead! If we take 157 as a fair average of the executions at Wurtzburg (and the catalogue itself states that the list was by no means complete), the amount of executions there in the course of the century preceding 1628 would be 15,700. We know that from 1610 to 1660 was the great epoch of the witch trials, and that so late as 1749 Maria Renata was executed at Wurtzburg for witchcraft; and though in the interval between 1660 and that date, it is to be hoped that the number of these horrors had diminished, there can be little doubt that several thousands fall to be added to the amount already stated. If Bainberg, Paderborn, Treves, and the other Catholic bishoprics, whose zeal was not less ardent, furnished an equal contingent, and if the Protestants, as we know, actually vied with them in the extent to which these cruelties were carried, the number of victims from the date of Innocent's bull to the final extinction of these prosecutions, must considerably exceed 100,000 in Germany.'

Witchcraft in Scotland.

The mania respecting witchcraft, which sprang up into vigour throughout southern Europe in consequence of the edicts of Innocent and Leo, spread in time to Scotland, and acquired strong possession of the public mind during the reign of Queen Mary. At that period an act was passed by the Scottish Parliament for the

suppression and punishment of witchcraft; but this only served, as the papal bulls had done, to confirm the people in their maniacal credulity, and to countenance and propagate the general delusion. In terms of these ill-judged statutes, great numbers of persons, male as well as female, were charged with having intercourse with the devil, convicted, and burned on the Castlehill of Edinburgh and elsewhere. This continued during the earlier part of the reign of James VI., whose mind, unfortunately for the more aged of the female part of his subjects, was deeply impressed with the flagrant nature of the crime of witchcraft. In 1590, James, it is well known, made a voyage to Denmark to see, marry, and conduct home in person his appointed bride, the Princess Anne. Soon after his arrival, a tremendous witch conspiracy against the happy conclusion of his homeward voyage was discovered, in which the principal agents appeared to be persons considerably above the vulgar. One was Mrs Agnes Sampson, commonly called the *Wise Wife of Keith* (Keith being a village in East-Lothian), who is described as 'grave, matron-like, and settled in her answers.' On this occasion, the king was induced by his peculiar tastes to engage personally in the business of judicial investigation. He had all the accused persons brought before himself for examination, and even superintended the tortures applied to them to induce confession. The statements made by these poor wretches form a singular tissue of the ludicrous and horrible in intimate union.

'The said Agnis Sampson was after brought again before the king's majestie and his council, and being examined of the meetings and detestable dealings of those witches, she confessed that upon the night of All-Hallow-even, she was accompanied, as well with the persons aforesaid, as also with a great many other witches, to the number of two hundred, and that all they together went to sea, each one in a riddle, or sieve, and went in the same very substantially, with flagons of wine, making merrie, and drinking by the way in the same riddles or sieves, to the kirk of North Berwick in Lothian; and that after they had landed, took hands on the land, and danced this reil, or short daunce, singing all with one voice—

"Cummer, goe ye before, cummer, goe ye;
Gif ye will not goe before, cummer, let me."

At which she confessed that Geillis Duncan did goe before them, playing this reil or daunce upon a small trump, called a Jew's harp, until they entered into the kirk of North Berwick. These made the king in a wonderful admiration, and he sent for the said Geillis Duncan, who upon the like trump did play the said daunce before the king's majestie, who, in respect of the strangeness of these matters, took great delight to be present at their examinations.'

In the sequel of Agnes Sampson's confession we find some special reasons for the king's passionate liking for these exhibitions, in addition to the mere love of the marvellous. The witches pandered to his vanity on all occasions, probably in the vain hope of mitigating their own doom. Agnes Sampson declared that one great object with Satan and his agents was to destroy the king; that they had held the great North Berwick convention for no other end; and that they had endeavoured to effect their aim on many occasions, and particularly by raising a storm at sea when James came across from Denmark. 'The witches demanded of the divell why he did beare such hatred to the king? who answered, by reason the king is the greatest enemie hee hath in the world.' Such a eulogy, from such a quarter, could not but pamper the conceit of 'the Scottish Solomon.'

The following further points in the deposition of Agnes Sampson are worthy of notice:—'*Item*, She went with the witch of Carrieburn, and other witches, to the kirk of Newton, and taking up dead folks and jointing them [cutting off fingers, &c.], made enchanted powders for witchcraft. *Item*, She went with other witches in a boat, the devil going before them like a rick of hay. *Item*, The devil, in the shape of a dog, gave her responses concerning her laird's recovery, and endeavoured to put awa ane of the ladies' daughters. *Item*, She raised a universal great storm in the sea when the queen was coming to Scotland, and *wrote a letter* to that effect to a witch in Leith. *Item*, She used this prayer in the healing of sickness:—

"All kinds of ill that ever may be,"' &c.

The repetition of these and such-like verses by the confessing witches, has been matter of frequent surprise. But it must be remembered that a code of witchcraft, extensively known and accredited, existed at that day, regular forms and rules for its exercise having been laid down in the course of time. It must be recollected, also, that these poor creatures, though guiltless of all supernatural intercourse, had really pretended to the gift of healing by charms and incantations in many cases, and had to invent or learn formulas for the purpose. Besides, we find these doggerel scraps chiefly in the revelations of Agnes Sampson. She, it is stated, could write, and of course could read also; hence she is to be regarded as a person who had had superior opportunities for acquiring a knowledge of the witchcraft code, as well as superior capabilities for filling up deficiencies on the spur of the moment. In her confession she implicated one Dr Fian, otherwise called John Cunningham, master of the school at Saltpans in Lothian, a man whose story may be noticed at some length, as one of the most curious and instructive in the whole annals of Scottish witchcraft.

Mrs Sampson deposed that Dr Fian was always a prominent person at the witch-meetings, and Geillis Duncan, the marvellous trump-player, confirmed this assertion. Whether made through heedlessness or malice, these averments decided Fian's fate. He was seized, and after being 'used with the *accustomed paine* provided for those offences inflicted upon the rest, first, by *thrawing of his head with a rope*, whereat he would confess nothing;' and secondly, being urged 'by fair meanes to confesse his follies,' which had as little effect; 'lastly, hee was put to the most severe and cruell paine in the world, called the bootes, when, after he had received three strokes, being inquired if he would confesse his actes and wicked life, his tongue would not serve him to speake; in respect whereof, the rest of the witches willed to search his tongue, under which was founde two pinnes thrust up into the heade; whereupon the witches did say, now is the charme stinted, and showed that those charmed pins were the cause he could not confesse anything; then was he immediately released of the bootes, brought before the king, and his confession was taken.' Appalled by the cruel tortures he had undergone, Fian seems now only to have thought how he could best get up a story that should bring him to a speedy death. He admitted himself to be the devil's 'register,' or clerk, who took the oaths from all witches at their initiation, and avowed his having bewitched various persons. In proof of the latter statement he instanced the case of a gentleman near Saltpans, whom he had so practised upon, he said, that the victim fell into fits at intervals. This person, who seems to have been either a lunatic or afflicted with St Vitus's dance, was sent for, and 'being in his majestie's chamber, suddenly hee gave a great scritch, and fell into madnesse, sometimes bending himself, and sometimes capring so directly up, that his heade did touch the seeling of the chamber, to the great admiration of his majestie.' On these and other accounts Dr Fian was sent to prison, but he contrived soon after to escape from it. 'By means of a hot and harde pursuite,' he was retaken, and brought before the king, to be examined anew. But the unfortunate man had had time to think, and like Cranmer under somewhat similar circumstances, resolved to retract the admissions which the weakness of the body had drawn from him, and to suffer anything rather than renew them. He boldly told this to the king; and James, whom these records make us regard with equal contempt and

indignation, ordered the unfortunate man to be subjected to the following most horrible tortures:—'His nailes upon all his fingers were riven and pulled off with an instrument called in Scottish a *turkas*, which in England are called a payre of pincers, and under everie nayle there was thrust in two needles over, even up to the heades; at all which tormentes, notwithstanding, the doctor never shrunk a whit, neither would he then confesse it the sooner for all the tortures inflicted on him. Then was hee, with all convenient speed, by commandement, convaied again to the torment of the bootes, wherein he continued a long time, and did abide so many blowes in them, that his legges were crusht and beaten together as small as might bee, whereby they were make unserviceable for ever.' Notwithstanding all this, such was the strength of mind of the victim, or, as King James termed it, 'so deeply had the devil entered into his heart,' that he still denied all, and resolutely declared that 'all he had done and said before was only done and said for fear of the paynes which he had endured.' As, according to this fashion of justice, to confess or not to confess was quite the same thing, the poor schoolmaster of Saltpans was soon afterwards strangled, and then burned on the Castlehill of Edinburgh (January 1591).

Much about the same time that Agnes Sampson made her confessions, some cases occurred, showing that witchcraft was an art not confined to the vulgar. A woman of high rank and family, Catherine Ross, Lady Fowlis, was indicted at the instance of the king's advocate for the practice of witchcraft. On inquiry, it was clearly proved that this lady had endeavoured, by the aid of witchcraft and poisons, to take away the lives of three or more persons who stood between her and an object she had at heart. She was desirous to make young Lady Fowlis possessor of the property of Fowlis, and to marry her to the Laird of Balnagowan. Before this could be effected, Lady Fowlis had to cut off her sons-in-law, Robert and Hector Munro, and the young wife of Balnagowan, besides several others. Having consulted with witches, Lady Fowlis began her work by getting pictures of the intended victims made in clay, which she hung up, and shot at with arrows shod with flints of a particular kind, called elf-arrow heads. No effect being thus produced, this really abandoned woman took to poisoning ale and dishes, none of which cut off the proper persons, though others who accidentally tasted them lost their lives. By the confession of some of the assistant hags, the purposes of Lady Fowlis were discovered, and she was brought to trial; but a local or provincial jury of dependants acquitted her. One of her purposed victims, Hector Munro, was then tried in turn for conspiring with witches against the life of his brother George. It was proved, in evidence, that a curious ceremony had been practised to effect this end. Hector, being sick, was carried abroad in blankets, and laid in an open grave, on which his foster-mother ran the breadth of nine riggs, and returning, was asked by the chief attendant witch, 'Which she chose should live, Hector or George?' She answered, 'Hector.' George Munro did die soon afterwards, and Hector recovered. The latter was tried, but, like Lady Fowlis, was acquitted by a provincial jury.

These disgraceful proceedings were not without their parallel in other families of note of the day. Euphemia Macalzean, daughter of an eminent judge, Lord Cliftonhall, was burned at the stake in 1591, having been convicted, if not of witchcraft, at least of a long career of intercourse with pretenders to witchcraft, whom she employed to remove obnoxious persons out of her way—tasks which they accomplished by the very simple means of poisoning, where they did accomplish them at all. The jury found this violent and abandoned woman, for such she certainly was, guilty of participation in the murder of her own godfather, of her husband's nephew, and another individual. They also found her guilty of having been at the Wise Woman of Keith's great witch-convention of North Berwick; but every witch of the day was compelled to admit having been there, out of compliment to the king, to whom it was a source of agreeable terror to think himself of so much importance as to call for a solemn convocation of the powers of evil to overthrow him. Euphemia Macalzean was 'burnt in assis, *quick*, to the death.' This was a doom not assigned to the less guilty. Alluding to cases of this latter class, a writer (already quoted) in the Foreign Quarterly Review remarks, 'In the trials of Bessie Roy, of James Reid, of Patrick Currie, of Isobel Grierson, and of Grizel Gardiner, the charges are principally of taking off and laying on diseases either on men or cattle; meetings with the devil in various shapes and places; raising and dismembering dead bodies for the purpose of enchantments; destroying crops; scaring honest persons in the shape of cats; taking away women's milk; committing housebreaking and theft by means of enchantments; and so on. South-running water, salt, rowan-tree, enchanted flints (probably elf-arrow heads), and doggerel verses, generally a translation of the Creed or Lord's Prayer, were the means employed for effecting a cure.' Diseases, again, were laid on by forming pictures of clay or wax; by placing a dead hand, or some mutilated member, in the house of the intended victim; or by throwing enchanted articles at his door. A good purpose did not save the witch; intercourse with spirits in any shape being the crime.

Of course in the revelations of the various witches inconsistencies were abundant, and even plain and evident impossibilities were frequently among the things averred. The sapient James, however, in place of being led by these things to doubt the whole, was only strengthened in his opinions, it being a maxim of his that the witches were 'all extreme lyars.' Other persons came to different conclusions from the same premises, and before the close of James's reign many men of sense began to weary of the torturings and incrimi[illegible] that took place almost *every day*, in town or country, and had done so for a period of thirty years (betwixt 1590 and 1620). Advocates now came forward to defend the accused, and in their pleadings ventured even to arraign some of the received axioms of 'Daemonologie' laid down by the king himself, in a book bearing that name. The removal of James to England moderated, but did not altogether stop the witch prosecutions. After his death they slackened more considerably. Only eight witchcraft cases are on the Record as having occurred between 1625 and 1640 in Scotland, and in one of these cases, remarkable to tell, the accused escaped. The mania, as it appears, was beginning to wear itself out.

As the spirit of puritanism gained strength, however, which it gradually did during the latter part of the reign of Charles I., the partially-cleared horizon became again overcast, and again was this owing to ill-judged edicts, which, by indicating the belief of the great and the educated in witchcraft, had the natural effect of reviving the frenzy among the flexible populace. The General Assembly was the body in fault on this occasion, and from this time forward the clergy were the great witch-hunters in Scotland. The Assembly passed condemnatory acts in 1640, 1643, 1644, 1645, and 1649, and with every successive act the cases and convictions increased, with even a deeper degree of attendant horrors than at any previous time. 'The old impossible and abominable fancies,' says the review formerly quoted, 'of the *Malleus* were revived. About thirty trials appear on the Record between 1649 and the Restoration, only one of which appears to have terminated in an acquittal; while at a single circuit, held at Glasgow, Stirling, and Ayr, in 1659, seventeen persons were convicted and burnt for this crime.'

It must be remembered, however, that the phrase 'on the Record' alludes only to justiciary trials, which formed but a small proportion of the cases really tried. The justiciary lists take no note of the commissions perpetually given by the privy-council to resident gentlemen and clergymen to try and burn witches in their respective districts. These commissions executed people over the whole country in multitudes. Wodrow, Lamont,

Mercer, Whitelocke, and other chroniclers, prove this but too satisfactorily.

The clergy continued, after the Restoration, to pursue these imaginary criminals with a zeal altogether deplorable. The Justiciary Court condemned twenty persons in the first year of Charles II.'s reign (1661); and in one day of the same year the council issued fourteen new provincial commissions, the aggregate doings of which one shudders to guess at. To compute their condemnations would be impossible, for victim after victim perished at the stake, unnamed and unheard of. Morayshire became at this particular period the scene of a violent fit of the great moral frenzy, and some of the most remarkable examinations signalising the whole course of Scottish witchcraft took place in that county. The details, though occasionally ludicrous from their absurdity, are too horrible for narration in the present pages.

The popular frenzy seems to have exhausted itself by its own virulence in 1661–62; for an interval of six years subsequently elapsed without a single justiciary trial for the crime of witchcraft, and one fellow was actually whipped for charging some person with it. After this period, the dying embers of the delusion only burst out on occasions, here and there, into a momentary flame. In 1678, several women were condemned, 'on their own confession,' says the Register; but we suspect this only means in reality that one malicious being made voluntary admissions involving others, as must often have been the case, we fear, in these proceedings. Scattered cases took place near the beginning of the eighteenth century; such as those at Paisley in 1697, at Pittenweem in 1704, and at Spott about the same time. It is curious that as something like direct evidence became necessary for condemnation, that evidence presented itself, and in the shape of possessed or enchanted young persons, who were brought into court to play off their tricks. The most striking case of this nature was that of Christian Shaw, a girl about eleven years old, and the daughter of Mr Shaw of Bargarran in Renfrewshire. This wretched girl, who seems to have been an accomplished hypocrite, young as she was, quarrelled with a maid-servant, and to be revenged, fell into convulsions, saw spirits, and, in short, feigned herself bewitched. To sustain her story, she accused one person after another, till not less than twenty were implicated, some of them children of the ages of twelve and fourteen! They were tried on the evidence of the girl, and five human beings perished through her malicious impostures. It is remarkable that this very girl afterwards founded the thread manufacture in Renfrewshire. From a friend who had been in Holland, she learned some secrets in spinning, and putting them skilfully in practice, she led the way to the extensive operations carried on in that department of late years. She became the wife of the minister of Kilmaurs, and it is to be hoped, had leisure and grace to repent of the wicked misapplication, in her youth, of those talents which she undoubtedly possessed.

The last justiciary trial for witchcraft in Scotland was in the case of Elspeth Rule, who was convicted in 1708, and—banished. The last regular execution for the crime is said to have taken place at Dornoch in 1722, when an old woman was condemned by David Ross, sheriff of Caithness. But we fear the provincial records of the north, if inquired into, would show later deaths on this score. However, here may be held to end the tragical part of the annals of Scottish witchcraft. The number of its victims, for reasons previously stated, it would be difficult accurately to compute; but the black scroll would include, according to those who have most attentively inquired into the subject, upwards of FOUR THOUSAND persons! And by what a fate they perished! Cruelly tortured while living, and dismissed from life by a living death amid the flames! And for what? For an impossible crime! And who were the victims, and who the executioners? The victims, in by far the majority of cases, were the aged, the weak, the deformed, the lame, and the blind; those to whom nature had been ungentle in her outward gifts, or whom years and infirmities had doomed to poverty and wretchedness; exactly that class of miserable beings, in short, for whom more enlightened times provide houses of refuge, and endow charitable institutions, aiming, in the spirit of true benevolence, to supply to them that attention and support which nature or circumstances have denied them the power of procuring for themselves. Often, too, was the victim a person distinguished by particular gifts and endowments; gifts bestowed by the Creator in kindness, but rendered fatal to the possessor by man. These were the victims of witchcraft. The executioners were the wisest and greatest of their time. Men distinguished above their fellows for knowledge and intelligence, ministers of religion and of the laws, kings, princes, and nobles—these, and such as these, judged of the crime, pronounced the doom, and sent the poor victims of delusion to the torture, the stake, and the scaffold.

Witchcraft in England.

Witchcraft was first denounced in England, by formal and explicit statutes, in the year 1541, in the reign of Henry VIII. Previously to that time many witch-trials had taken place, and severe punishments had even been inflicted on the parties concerned; but this was occasioned by the direction of the arts of sorcery, in these particular instances, against the lives and wellbeing of others, and not from the legal criminality of such arts themselves. Shakspeare has made some early cases of this nature familiar to us, and in particular that of the Duchess of Gloucester, who, for conspiring with witches against the life of the reigning sovereign, Henry VI., was compelled to do public penance, and imprisoned for life. But, as has been said, the mode of prosecuting the guilty purpose was here altogether a subsidiary matter. If a person waved his hat three times in the air, and three times cried 'Buzz!' under the impression that by that formula the life of another might be taken away, the old law and law-makers (as, for example, Selden, who states this very case) considered the formulist worthy of death as a murderer in intent; and upon this principle the trafficking with witches was punished in early times.

Witchcraft, however, by and by assumed greater statutory importance in England as elsewhere. Henry VIII.'s two acts were levelled against conjuration, witchcraft, false prophecies, and pulling down of crosses. Here the charge was still something beyond mere sorcery, and it was left for Elizabeth, in 1562, to direct a statute exclusively against that imaginary crime. At the same time, that princess extenuated her conduct in part, by limiting the penalty of the crime, when stripped of its customary accessories, to the pillory. The first transgression at least received no heavier punishment. The cases of Elizabeth's reign were chiefly cases of pretended possession, sometimes, however, involving capital charges against those said to have caused the possession. In one famous case, of which the main features were as ludicrous as the issue was deplorable, three poor persons—an old man named Samuel, with his wife and daughter—were tried at Huntingdon for having bewitched the children of a Mr Throgmorton. Joan Throgmorton, a girl of fifteen, and the eldest of the children, was the main witness for the prosecution. She related many scenes, in which the actors were herself and a number of spirits sent by Dame Samuel to torment her, and to throw her into fits. These spirits, she said, were on familiar terms with her, and were named Pluck, Hardname, Catch, Blue, and three Smacks, who were *cousins*. Among other things, she said that one of the Smacks professed himself an admirer of hers, and beat the rest for her sake, as in the following instance related by her. One day Smack appeared before her. 'Whence come you, Mr Smack?' she said to him. 'From fighting Pluck and the rest, with cowl-staves, in Dame Samuel's back-yard,' replied Smack; and soon thereafter, accordingly, Pluck and Blue walked in, the one with his head broken, and the

other limping. 'How do you manage to beat them?' said the young lady to the victorious Smack: 'you are little, and they are big.' 'Oh,' says Smack: 'I can take up any two of them, and my cousins beat the rest.' Of such stuff were these charges made. It would appear that they were either the offspring of insanity on the part of the youthful Throgmortons, or that, having begun the farce in sport or spite, the accusers found at length that they could not retreat without a disgraceful confession of imposture. In part, the conduct of the poor Samuels was affecting, and even high-minded. After lengthened worrying, the accusers got Dame Samuel indirectly to confess her guilt, by making her repeat a prescribed charm, which had the effect of at once bringing the children out of their fits. But the old man and the daughter steadily maintained their innocence. The unfortunate family were condemned on the 4th April 1593, and soon after executed.

When James I. ascended the English throne, he unfortunately conceived it to be his duty immediately to illuminate the southerns on the subject of witchcraft. An act of the first year of his reign defines the crime with a degree of minuteness worthy of the adept from whose pen it undoubtedly proceeded. 'Any one that shall use, practise, or exercise any invocation of any evil or wicked spirit, or consult or convenant with, entertain or employ, feed or reward, any evil or wicked spirit, *to or for* ANY *purpose*; or take up any dead man, &c. &c. &c.; such offenders, duly and lawfully convicted and attainted, shall suffer death.' We have here witchcraft first distinctly made, of itself, a *capital* crime. Many years had not passed away after the passing of this statute, ere the delusion, which had heretofore committed but occasional and local mischief, became an epidemical frenzy, devastating every corner of England. Leaving out of sight single executions, we find such wholesale murders as the following in abundance on the Record. In 1612, twelve persons were condemned at once at Lancaster, and many more in 1613, when the whole kingdom rang with the fame of the 'Lancashire witches;' in 1622, six at York; in 1634, seventeen in Lancashire; in 1644, sixteen at Yarmouth; in 1645, fifteen at Chelmsford; and in 1645 and 1646, sixty persons perished in Suffolk, and nearly an equal number at the same time in Huntingdon. These are but a few selected cases. The poor creatures who usually composed these ill-fated bands are thus described by an able observer:—'An old woman with a wrinkled face, a furred brow, a hairy lip, a gobber tooth, a squint eye, a squeaking voice, or a scolding tongue, having a ragged coat on her back, a spindle in her hand, and a dog by her side—a wretched, infirm, and impotent creature, pelted and persecuted by all the neighbourhood because the farmer's cart had stuck in the gateway, or some idle boy had pretended to spit needles and pins for the sake of a holiday from school or work'—such were the poor unfortunates selected to undergo the last tests and tortures sanctioned by the laws, and which tests were of a nature so severe that no one would have dreamed of inflicting them on the vilest of murderers. They were administered by a class of wretches, who, with one Matthew Hopkins at their head, sprung up in England in the middle of the seventeenth century, and took the professional name of *witch-finders*. The practices of the monster Hopkins, who, with his assistants, moved from place to place in the regular and authorised pursuit of his trade, will give a full idea of the tests referred to, as well as of the horrible fruits of the witchcraft frenzy in general. From each town which he visited, Hopkins exacted the stated fee of twenty shillings, and in consideration thereof, he cleared the locality of all suspected persons, bringing them to confession and the stake in the following manner:—He stripped them naked, shaved them, and thrust pins into their bodies to discover the witch's mark; he wrapped them in sheets, with the great toes and thumbs tied together, and dragged them through ponds or rivers, when, if they sunk, it was held as a sign that the baptismal element did not reject them, and they were cleared; but if they floated (as they usually would do for a time), they were then set down as guilty, and doomed: he kept them fasting and awake, and sometimes incessantly walking, for twenty-four or forty-eight hours, as an inducement to confession; and, in short, practised on the accused such abominable cruelties, that they were glad to escape from life by confession. If a witch could not shed tears at command (said the further items of this wretch's creed), or if she hesitated at a single word in repeating the Lord's Prayer, she was in league with the Evil One. The results of these and such-like tests were actually and universally admitted as evidence by the administrators of the law, who, acting upon them, condemned all such as had the amazing constancy to hold out against the tortures inflicted. Few gave the courts that trouble. Butler has described Hopkins in his 'Hudibras' as one

> 'Fully empowered to treat about
> Finding revolted witches out.
> And has he not within this year
> Hanged *three score* of them in *one* shire?
> Some only for *not* being drowned;
> And some for sitting above ground.'

After he had murdered hundreds, and pursued his trade for many years (from 1644 downwards), the tide of popular opinion finally turned against Hopkins, and he was subjected, by a party of indignant experimenters, to his own favourite test of swimming. It is said that he escaped with life, but from that time forth he was never heard of again.

The era of the Long Parliament was that perhaps which witnessed the greatest number of executions for witchcraft. *Three thousand persons* are said to have perished during the continuance of the sittings of that body, by legal executions, independently of summary deaths at the hands of the mob. Witch-executions, however, were continued with nearly equal frequency long afterwards. One noted case occurred in 1664, when the enlightened and just Sir Matthew Hale tried and condemned two women, Amy Dunny and Rose Callender, at Saint Edmondsbury, for bewitching children, and other similar offences. Some of the items of the charge may be mentioned. Being capriciously refused some herrings, which they desired to purchase, the two old women expressed themselves in impatient language, and a child of the herring-dealer soon afterwards fell ill—in consequence. A carter drove his wagon against the cottage of Amy Dunny, and drew from her some not unnatural objurgations; immediately after which, the vehicle of the man stuck fast in a gate, without its wheels being impeded by either of the *posts*, and the unfortunate Amy was credited with the accident. Such accusations formed the burden of the dittay, in addition to the bewitching of the children. These young accusers were produced in court, and on being touched by the old women, fell into fits. But on their eyes being covered, they were thrown into the same convulsions by *other* parties precisely in the same way. In the face of this palpable proof of imposture, and despite the general absurdity of the charges, Sir Matthew Hale committed Amy Dunny and Rose Callender to the tender mercies of the hangman. It is stated that the opinion of the learned Sir Thomas Browne, who was accidentally present, had great weight against the prisoners. He declared his belief that the children were truly bewitched, and supported the possibility of such possessions by long and learned arguments, theological and metaphysical. Yet Sir Matthew Hale was one of the wisest and best men of his time, and Sir Thomas Browne had written an able work in exposition of Popular Fallacies!

For several years subsequent to this (1664), trials and executions were yet far from unusual. Chief-Justices North and Holt, to their lasting credit, were the first individuals occupying the high places of the law, who had at once the good sense and the courage to set their faces against the continuance of this

destructive delusion. In one case, by detecting a piece of gross imposture, Chief-Justice North threw into disrepute, once and for all, the trick of *pin-vomiting*, one of the most striking and convincing practices of the possessed. A male sorcerer stood at the bar, and his supposed victim was in court, vomiting pins in profusion. These pins were straight, a circumstance which made the greater impression, as those commonly ejected in such cases were bent, engendering frequently the suspicion of their having been previously and purposely placed in the mouth. The chief-justice was led to suspect something in this case by certain movements of the bewitched woman; and by closely cross-questioning one of her own witnesses, he brought it fully out that the wretched creature placed pins in her stomacher, and by a dexterous dropping of her head in her simulated fits, picked up the articles for each successive ejection. The man was found guiltless. The acquittal called forth such pointed benedictions on the judge from a very old woman present, that he was induced to ask the cause. 'Oh, my lord,' said she, 'twenty years ago they would have hanged me for a witch if they could, and now, but for your lordship, they would have murdered my innocent son.'

The detected imposture in this case saved the accused. It was under Holt's justiceship, however, that the first acquittal is supposed to have taken place, in *despite* of all evidence, and upon the fair ground of the general absurdity of such a charge. In the case of Mother Munnings, tried in 1694, the unfortunate pannel would assuredly have perished, had not Chief-Justice Holt summed up in a tone so decidedly adverse to the prosecution, that the verdict of Not Guilty was called forth from the jury. In about ten other trials before Holt, between the years 1694 and 1701, the result was the same, through the same influences. It must be remembered, however, that these were merely noted cases, in which the parties withstood all preliminary inducements to confession, and came to the bar with the plea of not guilty. About the same period—that is, during the latter years of the seventeenth century—summary executions were still common, in consequence of confessions extracted after the Hopkins fashion, yet too much in favour with the lower classes. The acquittals mentioned only prove that the regular ministers of the law were growing too enlightened to countenance such barbarities. Cases of possession, too, were latterly overlooked by the law, which would have brought the parties concerned to a speedy end in earlier days, even though they had done no injury to other people, and were simply unfortunate enough to have made compacts with the demon for the attainment of some purely personal advantages. For example, in 1689, there occurred the famous case of a youth named Richard Dugdale, who sacrificed himself to the devil, on condition of being made the *best dancer* in Lancashire. The dissenting clergy took this youth under their charge, and a committee of them fasted and prayed, publicly and almost incessantly, for a whole year, in order to expel the dancing demon. The idea of this impostor leaping for a twelvemonth, and playing fantastic tricks before these grave divines, is extremely ludicrous. But the divines played tricks not less fantastic. They became so contemptuously intimate with the demon, as to mock him on account of saltatory deficiencies. A portion of their addresses to him on this score has been preserved, but of too ridiculous a nature for quotation in these pages. If anything else than a mere impostor, it is probable that Dugdale was affected with St Vitus's Dance; and this is the more likely, as a regular physician brought his dancing to a close after all. But the divines took care to claim for themselves the merit of the cure.

After the time of Holt, the ministers of the law went a step farther in their course of improvement, and spared the accused in spite of condemnatory *verdicts*. In 1711, Chief-Justice Powell presided at a trial where an old woman was pronounced guilty. The judge, who had sneered openly at the whole proceedings, asked the jury if they found the woman 'guilty upon the indictment of conversing with the devil in the shape of a cat?' The reply was, 'We do find her guilty of that;' but the question of the judge produced its intended effect in casting ridicule on the whole charge, and the woman was pardoned. An able writer in the Foreign Quarterly Review remarks, after noticing this case, 'yet, frightful to think, after all this, in 1716, Mrs Hicks, and her daughter, aged *nine*, were hanged at Huntingdon for selling their souls to the devil, and raising a storm by pulling off their stockings, and making a lather of soap! With this crowning atrocity, the catalogue of murders in England closes.' And a long catalogue, and a black catalogue it was. 'Barrington, in his observations on the statute of Henry VI., does not hesitate to estimate the numbers of those put to death in England, on this charge, at THIRTY THOUSAND!'

We have now glanced at the chief features in the history of witchcraft in England, from the enactment of the penal statutes against it. These statutes were not finally abolished till the middle of the eighteenth century, and unhappy consequences followed, in various instances, from their being left unrepealed. Though among the enlightened classes the belief in witchcraft no longer existed, the populace, in town and country, still held by the superstitions of their forefathers, and having the countenance of the statute-book, persecuted the unfortunate beings whose position and circumstances laid them open to the suspicion of sorcery. The ban of public opinion told severely enough upon the comforts of such poor creatures, but the rabble occasionally carried their cruel and ignorant oppressions to a greater length. On the 30th of July 1751, an aged pauper named Osborne, and his wife, were seized by a mob in Staffordshire, dragged through pools, and otherwise so vilely misused, that the woman died under the hands of her assailants. The attention of the law, and the indignation of the humane, were aroused. One man, who had taken a prominent share in the brutal outrage, was condemned on trial, and executed. Immediately afterwards, the penal statutes against witchcraft were abrogated by the legislature, and the remembrance of them only remains, as a wonder and warning to the posterity of those who practised and suffered from them, as well as to mankind at large.

It must not be imagined, we may observe in conclusion, that the present generation has no need of such a warning, or is relieved by its increased enlightenment from all chance of falling into similar errors. The nineteenth century has witnessed such impostors as Johanna Southcote, Matthews, Thom, Mormon, and others, and has seen a degree of enthusiastic and unhesitating credence given to their pretensions by many persons moving in a most respectable rank in society, which shows that the credulous spirit that created and supported witchcraft is not by any means extinguished. It is indeed a spirit only to be fully eradicated by such a universality of education and manly intelligence as can scarcely be expected to exist, excepting after the lapse of long-coming centuries of improvement. The subject which has been treated of here has therefore a moral. In brief words, the world may learn from it the peril of encouraging the idea of the possibility of direct spiritual influences and communications in these latter days—a thing discountenanced alike by the lights of reason and Scripture.

SPECTRAL ILLUSIONS.

The subject of spectral illusions, or, to use the common phraseology, apparitions or spectres, is now, in the estimation of scientific and properly-informed men, one of the simplest and most intelligible to which the mind can be directed; while, to the ignorant, it still appears full of doubt and mystery. An apparition, spectre, ghost, or whatever it may be called, is vulgarly supposed to be a supernatural appearance—a thing occurring out of the common order of nature. No particular time or place is assigned for the appearance; but we may observe that the time is usually evening or night, and the place soli-

tary, or apart from the busy haunts of man. According to old theories on the subject, the person who declared that he had seen such an appearance was either set down as the fabricator of an untruth, or his story was fondly believed, and in the latter case the supernatural incident was added to the mass of credible history. We shall now endeavour to set this conflict of testimony and opinion to rights. In all cases, it is quite possible for the declarant to speak the truth as respects what he saw, or thought he saw, and yet that no real apparition may have occurred. The whole affair, as we shall explain, is simply a mental delusion, caused by some species of disease in the organs which affect the vision.

Mental and bodily disorder, organic or functional, is now allowed by physicians to be the basis of all kinds of spectral illusion. Organic disorder of the body is that condition in which one or more organs are altered in structure by disease. Disease of the brain, which involves organic mental disorder, is properly disease of the body; but enduring lunacy or fatuity, existing (if they can do so) without disease in the structure of the brain, may also be called organic disorder of the mind. These explanations will show what is meant by that epithet, as applied either to affections of the mind or body. Functional disorder, again, of the mind or body, is that condition of things where the healthy action of the organ or organs, in part or whole, is impeded, without the existence of any disease of structure. It may be said that violent excitement of the imagination or passions constitutes functional mental disorder: 'anger is a temporary madness,' said the Romans wisely. As for functional bodily disorder, temporary affections of the digestive organs may be pointed to as common cases of such a species of physical derangement. All these disorders, and kinds of disorders, may appear in a complicated form, and, what is of most importance to our present argument, the *nervous system*, on which depends the action of the *senses*, the power of *volition*, and the operation of all the involuntary functions (such as the circulative and digestive functions), is, and must necessarily be, involved more or less deeply in all cases of constitutional disorder, organic or functional. These powers of the nerves, which form the sole medium by which mind and body act and react on each other, give us a clue to the comprehension of those strange phenomena called spectral illusions, which depend on a combination of mental and physical impressions.

Organic mental disorder generates spectral illusions. Almost every lunatic tells you that he sees them, and with truth; they are seemingly present to his diseased perceptions. The same cause, simply insanity, partial or otherwise, and existing either with or without structural brain disease, has been, we truly believe, at the foundation of many more apparition cases than any other cause. By far the greatest number of such cases ever put on record have been connected with fanaticism in religious matters; and can there be a doubt that the majority of the poor creatures, men and women, who habitually subjected themselves, in the early centuries of the church, to macerations and lacerations, and saw signs and visions, were simply persons of partially deranged intellect? St Theresa, who lay entranced for whole days, and who, in the fervour of devotion, imagined that she was frequently addressed by the voice of God, and that our Saviour, St Peter, and St Paul, would often in person visit her solitude, is an example of this order of monomaniacs. That this individual, and others like her, should have been perfectly sensible on all other points, is a phenomenon in the pathology of mind too common to cause any wonder. We would ascribe, we repeat, a large class of apparition cases, including these devotional ones, to simple mental derangement. The eye in such instances may take in a correct *impression* of external objects, but this is not all that is wanting. A correct *perception by the mind* is essential to healthy and natural vision, and this perception the deranged intellect cannot effect. A three-footed stool may then become a kneeling angel. We would therefore have such persons regarded not in the uncharitable light of impostors, but of poor creatures who mistook natural hallucinations for supernatural.

Undoubtedly, however, many of those cases of spectral illusions which have made the deepest impression on mankind, have not arisen from organic mental disease on the part of the sight-seers. The lunatic is apt to betray his condition, and, that once recognised, his visions become of no weight. We have then to turn to other causes of spectre-seeing; and first, let us notice the mode of operation, and effects of certain *functional* disorders of the system, operating on the visual perceptions through the nerves. A bodily disorder, which ought in itself to afford a solution of all apparitions, is that called *delirium tremens*. This is most commonly induced, in otherwise healthy subjects, by continued dissipation. So long (say medical authorities) as the drinker can take food, he is comparatively secure against the disease, but when his stomach rejects common nourishment, and he persists in taking stimulants, the effects are for the most part speedily visible, at least in peculiarly nervous constitutions. The first symptom is commonly a slight impairment of the healthy powers of the senses of hearing and seeing. A ringing in the ears probably takes place; then any common noise, such as the rattle of a cart on the street, assumes to the hearing a particular sound, and arranges itself into a certain tune perhaps, or certain words, which haunt the sufferer, and are by and by rung into his ears on the recurrence of *every* noise. The proverb, 'as the fool thinks, so the bell tinks,' becomes very applicable in his case. His sense of seeing in the meanwhile begins to show equal disorder; figures float before him perpetually when his eyes are closed at night. By day, also, objects seem to move before him that are really stationary. The senses of touch, taste, and smell, are also involved in confusion.

In this manner the disturbance of the senses goes on, increasing always with the disorder of the alimentary function, until the unhappy drinker is at last visited, most probably in the twilight, by visionary figures, distinct in outline as living beings, and which seem to speak to him with the voice of life. At first he mistakes them for realities, but soon discovering his error, is thrown into the deepest alarm. If he has the courage to approach and examine any one of the illusory figures, he probably finds that some fold of drapery, or some shadow, has been the object converted by his diseased sense into the apparition, and he may also find that the voice was but some simple household sound converted by his disordered ear into strange speech; for the senses, at least in the milder cases of this sort, rather *convert* than *create*, though the metamorphosed may differ widely from the real substance. The visitations and sufferings of the party may go on increasing, till he takes courage to speak to the physician, who by great care restores his alimentary organs to a state of health, and in consequence, the visions slowly leave him. If, however, remedies are not applied in time, the party will probably sink under the influence of his disorder. The spectral figures and voices, being solely the creation of his own fancy, will seem to do or say anything that may be uppermost in that fancy at the moment, and will encourage him to self-murder by every possible argument—all emanating of course from his own brain. The whole consists merely of his *own fancies bodied forth to him visibly and audibly*. His own poor head is the seat of all; there is nothing apart from him—nothing but vacancy.

Dr Alderson, a respectable physician, mentions his being called to a keeper of a public-house, who was in a state of great terror, and who described himself as having been haunted for some time with spectres. He had first noticed something to be wrong with him on being laughed at by a little girl for desiring her to lift some oyster shells from the floor. He himself stooped, but found none. Soon after, in the twilight, he saw a soldier enter the house, and not liking his manner, desired him to go away; but receiving no answer, he sprang forward to seize the intruder, and to his horror

found the shape to be but a phantom! The visitations increased by night and by day, till he could not distinguish real customers from imaginary ones, so definite and distinct were the latter in outline. Sometimes they took the forms of living friends, and sometimes of people long dead. Dr Alderson resorted to a course of treatment which restored the strength of the digestive organs, and gradually banished the spectres. At the close of the account, it is said that the man emphatically expressed himself to have now received 'a perfect conviction of the nature of ghosts.'

Many additional cases from Hibbert, Abercromby, and other writers, might be quoted, in which the visual impressions and perceptions were in a similar way affected by the influence of digestive derangement. But as no doubt can rationally exist on the point, from the comparative commonness of the disease, no more proof need be brought forward. However, the inference naturally deducible from these facts is too important to be overlooked. Here we find, by unquestionable medical evidence, that a man walking about in apparent bodily health, and mentally sane, may nevertheless be subject to most distinct visitations of spectral figures, some of them in the semblance of *dead* persons. We find this, we repeat, to be within the range of natural phenomena. Now, is it not more likely, in those cases where wonderful apparitions are reported to have been seen, that the whole was referable to such natural causes, than that the grave gave up its dead, or that the laws of the universe were specially broken in upon in any other way? Even with only one such admitted source of spectral illusions as the malady alluded to, we should certainly err in passing it by to seek for explanations in supernatural quarters. But in reality we have *many* causes or sources of them, and to these we shall now look, in continuation of our argument.

Among the other varieties of bodily ailments affecting either structure or function, which have been found to produce spectral illusions—fevers, inflammatory affections, epileptic attacks, hysteria, and disorders of the nerves generally, are the most prominent. As regards fevers and inflammatory affections, particularly those of the brain, it is well known to almost every mother or member of a large family, that scarcely any severe case can occur without illusions of the sight to a greater or less extent. In hysteric and epileptic cases, also, where fits or partial trance occur, the same phenomena are frequently observed. But we shall not enlarge on the effects produced by the influence of severe and obviously-existing maladies, as it is in those cases only where the spectre-seer has exhibited *apparent* sanity of mind and body, that special wonder has been excited. It is so far of great importance, however, to notice that these diseases do produce the illusions, as in most cases it will be found on inquiry that the party subject to them, however sound to appearance at the time, *afterwards* displayed some of these complaints in full force; and we may then rationally explain the whole matter by supposing the seeds of the ailments to have early existed in a latent state. A German lady, of excellent talents and high character, published an account some years back of successive visions with which she had been honoured, as she believed, by Divine favour. Dr Crichton, however, author of an able work on insanity, found that the lady was always affected with the *aura epileptica* during the prevalence of the illusions; or, in other words, that she was labouring under slight attacks of epilepsy. Thus simply was explained a series of phenomena which, from the high character for veracity of the subject of them, astonished a great part of Germany. Another case, where functional bodily disorder of a different and very simple kind was present in an unrecognisable state, and produced extraordinary illusions, was the famous one of Nicolai, the Berlin bookseller. This individual, when in a perfectly fit state to attend to his ordinary business, was suddenly visited one day, when casually excited by some annoying circumstance, by the figure of a person long dead. He asked his wife, who was present, if she saw it; she did not. The bookseller was at first much alarmed, but being a man of sense and intelligence, he soon became convinced of the illusory, yet natural character of the spectra, which subsequently, for a period of two whole years, appeared to him in great numbers, and with daily frequency. 'I generally saw,' says he, 'human forms of both sexes, but they took not the smallest notice of each other, moving as in a market-place, where all are eager to press through the crowd; at times, however, they seemed to be transacting business with one another. I also saw several times people on horseback, dogs, and birds. All these phantasms appeared to me in their natural size, and as distinct as if alive; none of the figures appeared particularly terrible, comical, or disgusting, most of them being of an indifferent shape, and some presenting a pleasing aspect. The longer these phantoms continued to visit me, the more frequently did they return.' They also spoke to him repeatedly.

These phantasms lasted, as we have said, two years. The issue is peculiarly worthy of note. Nicolai had in former years fallen into the habit of periodical blood-letting by leeches, but had ventured to stop the practice previous to the accession of the phantasms, and during their prevalence he had only been advised to attend to the state of his digestive organs. After they had endured for the time mentioned, it was thought fit to renew the blood-letting. At eleven in the morning, while the room was crowded with the spectral figures, the leeches were applied. As the bleeding slowly proceeded, the figures grew dimmer and dimmer, and finally, by eight o'clock in the evening, they had all melted into thin air, never to re-appear! This most remarkable case, the first in which any individual dared calmly to come forward and avow such an affection, at the risk of incurring the charge of insanity, was founded, we thus see, simply on a plethoric or surcharged state of the blood-vessels. Nicolai deserves great credit for the philosophic composure with which he recorded the phenomena presented to him; but his statement, which has often been republished in this country, seems defective in some points, and, from the interest of the subject, we may be pardoned for presuming to notice these. Generally speaking, he represents his spectral visitants as things which came and went, and assumed various shapes, and appeared in certain numbers, *uninfluenced* directly *by himself*. The total dependance which they had upon his own fancy of the *moment*, is not put clearly before us, though, by the truthful accuracy of his narrative, he unconsciously makes that fact apparent every instant. The surcharged state of the vessels was the fundamental cause of the phantasms, but his own passing fancies moulded them for the passing moment into shape, regulated their numbers, and gave them words. How could it be otherwise? The whole panorama was exhibited on his own retina, and the working brain behind was the manager and scene-shifter of the show.

Second-sight, taking the word in its common acceptation of supernatural sight-seeing, is one of the varieties of spectral illusion. Certain mental functions becoming diseased, the sense of sight is imposed upon by the appearance of things which are purely imaginary, but nevertheless supposed to be prophetic of future events. Idleness, solitude, insufficient diet, and an imagination led astray by ruminating too intensely on the causes of human weal and wo, may be assigned as the prevailing causes of the disease. The Lowland Scotch used occasionally to see *wraiths*, or spectral appearances of persons who were soon to quit this mortal scene; the Irish were also accustomed to the spectacle of *fetches*; and the Highlanders had their *second-sight*—the whole, be it observed, being but a variety of the same mental disease and delusion.

Second-sight, however, has formed the subject of a more regular profession than any other species of spectral frenzy. There were persons who, possessing from infancy a defective mental constitution, or having a taste for imposture, gave themselves out as habitual

sight-seers, and were reverenced accordingly by their unsophisticated neighbours. According to the credulous accounts of second-sight, the power of the seer is a natural endowment, and cannot be acquired by communication, or in any other way. It is usually talked of by its possessors as a painful and troublesome gift, and one which they would gladly be rid of if they could. Its vaticinations relate only to things to come, and not to past events. Young and old may alike possess the second-sight, and it is common also to men and women. The visions are sometimes predicative of good, and sometimes of evil: occasionally, the vision simply gives indifferent tidings.

These are a few of the most common peculiarities attendant on this faculty. There are likewise numberless rules affecting its exercise, and the interpretation of its visions. If a vision occur by day, for example, the accomplishment of what it is supposed to predict will be speedy; if by night, less so. An exact proportion, indeed, is maintained in this respect—the morning vision being sooner fulfilled than that of noon; the latter more quickly than that of the afternoon; and so on. If the seer beholds a figure in a shroud, it is considered a sure sign of death to the party represented by the figure; and according to the extent to which the shroud covers the body, the end will be quicker or slower. If a woman be seen at a man's left hand, it is a presage that she will be his wife, and this will be the case (say the true believers) though even both should then be married. If more than one woman be seen standing at a man's left hand, they will be married to him in rotation, as they stand nearer or farther from his arm. A seer often announces that such and such a guest will arrive at a certain hour, and though a hundred miles away, the guest, it is said, will appear at the stated time. If a seer observe a vision of trees and crops in some spot or another, though perfectly barren and bare at the moment, wood and grain will, it is believed, there be seen in due time. A visionary house is beheld by the gifted eye in a place where stone and lime were never laid, or expected to be laid; yet there will the real house forthwith be seen. To see a seat as if vacant when one is sitting in it, is a presage of the party's death. The seer may behold crowds of people, or single individuals, and very frequently he meets imaginary funeral parties, and determines the coming decease by the apparent mourners.

These rules of vaticination are *said to be* unvarying. No ordinary person sees the vision while it is present to the seer, but the same vision often appears to two or more of the gifted, either while they are together or apart. The Highlanders believe that children and the lower animals, such as cows and horses, behold the appearances while they are before the seer. This is made plain, they say, in the case of the animals, by the trembling which seizes them at the moment; and frequently the children will cry, and if asked the reason, will tell what unusual thing they behold or have beheld. It is almost needless to say that the stories told to prove the truth of these notions rest on no sure foundation, and that, at the best, the prophecies of the sight-seer only come to pass by chance.

Atmospheric Illusions.—Spectral or illusory appearances also take place from the power of refraction in the atmosphere. In certain conditions of the atmosphere, things at a distance, and really out of sight, as on the opposite side of a hill from the spectator, are represented in mid-air; but there is nothing supernatural in this—the whole is the effect of a simple cause. The following is an example of atmospheric illusion:—A gentleman and his servant, in the year 1744, beheld a troop of cavalry riding and performing various military evolutions on the side of Souter (or Soutra) Hill, in a spot so precipitous, as to render it absolutely impossible for man or beast to maintain a footing. The servant had in the previous year observed a single horseman hunting in nearly the same place, and had then come to the conclusion that the sight was illusory, it being impossible for a rider to cross a perpendicular precipice at speed. The troop of cavalry, therefore, was at once set down as an atmospheric deception, and numbers of persons of the district came to look on the extraordinary scene, which continued visible till nightfall. An explanation of the circumstance was afforded by the rebellion of the following year. Some party of rebels were most probably exercising in secret, in a spot where the evening sun so caught their figures as to reflect them on the acclivity of Souter Hill. The legend of the spectre of the Brocken in Germany, in like manner arises from the fact of the ground being favourable to the reflection of a visitor's figure against the evening sky. Our ancestors were occasionally alarmed with visions of armies fighting in the air, and similar illusions; had they been acquainted with the laws of atmospheric refraction, all would have appeared simple natural phenomena, having no relation to any future event, good or evil. (See OPTICS, Vol. I.)

Dreams.

It has now been seen that there are various modes in which the system may be so disturbed as to produce spectral illusions, and that, in the majority of these cases, the parties subject to them might seem to be not only of sound mind, but in perfect bodily health. Another mode of explaining cases of this description may now be pointed out. Many of the apparitions which have been vouched for by those subjected to them, have certainly been neither more nor less than *vivid dreams*. A dream is a slight and ill-arranged action of the thinking faculties during a state of partial sleep; in other words, when we dream we are only thinking in a partially-wakened state. The dream or the thought is in all cases but a momentary impression, perfectly natural in its operation; the state of mind which causes it being produced by temporary functional derangement; the stomach is usually less or more out of order. No dreams take place during sound sleep. In the greater number of instances, the half-awakened mind embarrasses itself with shreds of recollections of things formerly seen or thought of, and dressing these up in a new and fantastic form, a kind of drama is performed, having the semblance of reality. A servant-girl living in a family where there were some phrenological busts, and among others, a conspicuous one of Curran, awoke her bed companion one morning with the alarming information that the ghost of Curran stood at the foot of the bed dressed in a sailor's jacket, and having on his pale face the unwonted and unbust-like ornament of an immense pair of black whiskers. The other servant could see nothing, though the apparition seemed to her companion to remain visible for some minutes. On the tale being told, a pretty strong light was thrown on the matter. The master of the house had a yacht, and its sailors at that period were frequently about the premises. Going to bed much fatigued, and having her dreaming thoughts divided between her household duties and some gay whiskered beau of the yacht, the girl's fancy had dressed up Curran's bust, an object most familiar to her retina, in the way mentioned, giving him the sailor's person and whiskers as a fitting appendage. Had the object called up to the eye in this case, instead of being a bust of Curran, chanced to be a portrait of some wicked ancestor or ancestress of the family, as might easily have occurred from the greater comparative impression made on the mind by portraits of that cast, then should we have had a splendid instance of the preternatural appearance of a spirit stung by remorse, and haunting restlessly the scene of its mortal guilt. The girl, without imposture, might have conscientiously reiterated her conviction of the reality of the vision, and the possession of a haunted chamber would have most certainly been assigned to the mansion, inspiring such terror, that renewals of the illusion might really have taken place in consequence. Where the whole affair is not a fiction in such haunted-chamber cases, some solution of this kind may be with certainty applied. The prec-

tice of believing that dreams are indicative or symbolic of coming events, is one of the weakest of our popular superstitions, and is now very properly ridiculed by every rational mind.

MISCELLANEOUS SUPERSTITIONS.

During the seventeenth century, the belief in witchcraft, fairies, apparitions, charms, and every other species of supernatural agency, was universal in Britain, both among high and low, and clergy as well as laity. So ill instructed were the people in the art of tracing events to simple natural causes, that there appears to have been a continual liability to ascribe occurrences to the direct influence of good or evil spirits, but particularly to the devil. 'Give me leave,' says Walker in his 'History of Independency,' 'here to relate a passage, which I received from a person of quality—namely, It was believed, and that not without good cause, that Cromwell, the same morning that he defeated the king's army at Worcester fight, had conference personally with the devill, with whom he made a contract, that to have his will then, and in all things else, for seven years after that time (being the 3d of September 1651), he should, at the expiration of the said years, have him at his command, to do at his pleasure, both with his soul and body. Now if any one will please to reckon from the 3d of September 1651 till the 3d of September 1658, he shall find it to a day just seven years, and no more, at the end whereof he died; but with such extremity of tempestuous weather, that was by all men judged to be prodigious.' Such is a specimen of the egregious fallacies which passed for sound argument among our ancestors.

In Scotland, where religion assumed the garb of gloom and fanaticism, a belief in the personal appearance of devils was universal in the seventeenth century, and continued among the vulgar till within the last fifty years. The narrations of Satan's mean pranks, in assaulting ministers, waylaying travellers, and disturbing families while at worship, would fill a large volume. In the Rev. Mr Robert Law's 'Memorials of Memorable Things, from 1638 to 1684'—[edited by C. Kirkpatrick Sharpe, from the manuscript. Edinburgh: 1818]—we find the following entry:—

'October 1670.—There was a devill that troubled a house in Keppoch, within a mile of Glasgow, for the matter of eight days' tyme (but disappeared again), in casting pots, and droping stones from the roof, yet not hurting any, like that which appeared in the west, in a weaver's house, a good man, about fourteen yeirs agoe, which did the lyke, and spoke to them audibly.' The tricks of the devil, here referred to, as having taken place in a weaver's house in the west, about the year 1656, and which were implicitly believed by the most learned clergy of the time, are related at great length by Mr George Sinclair, professor of philosophy in the College of Glasgow, in his work, 'Satan's Invisible World Discovered.' The alleged events occurred at Glenluce in Wigtonshire, and would be too contemptible for quotation, if it were not desirable to show what paltry tricks were played off, and believed to be supernatural in those days. The family of the weaver being vexed with noises and appearances, send for the neighbouring clergyman to allay the devil, betwixt whom and the worthy man a dialogue takes place, from which we extract a few passages:—'The minister returning back a little, and standing upon the floor, the devil said, "I knew not these Scriptures till my father taught me them." Then the minister conjured him to tell whence he was. The foul fiend replied, "That he was an evil spirit, come from the bottomless pit of hell to vex this house, and that Satan was his father." And presently there appeared a naked hand, and an arm from the elbow down, beating upon the floor till the house did shake again; and also he uttered a most fearful and loud cry, saying, "Come up, my father—come up. I will send my father among you: see, there he is behind your backs!" Then the minister said, "I saw, indeed, a hand and an arm, when the stroke was given, and heard." The devil said to him, "Saw you that? It was not my hand; it was my father's: my hand is more black in the loof (palm.) Would you see me," says the foul thief, "put out the candle, and I shall come butt the house (into the outer room) among you like fireballs,"' &c. The visit of the minister was unavailing. 'About this time the devil began with new assaults; and taking the ready meat which was in the house, did sometimes hide it in holes by the door-posts, and at other times hid it under the beds, and sometimes among the bed-clothes and under the linens, and at last did carry it quite away, till nothing was left there save bread and water. The goodwife, one morning making porridge for the children's breakfast, had the wooden plate, wherein the meal lay, snatched from her quickly. "Well," says she, "let me have my plate again." Whereupon it came flying at her, without any skaith done.' Any further extract from this ridiculous, though at one time universally believed narrative, would be unnecessary. A modern police-officer would have effectually relieved 'the afflicted family,' by instantly discovering the performer of the tricks, and taking him into custody.

Besides the belief in aërial and terrestrial spirits, our credulous ancestors put faith in all kinds of romancing stories of river and sea demons. The more prevalent of these superstitious notions was a belief in mermaids and mermen, a class of creatures who lived in the sea, and had bodies half-human half-fish. Mermaids appear to have been much more common than mermen. The mermaid, we are told, possessed the body, from the middle upwards, of a beautiful female, with a head flowing with long yellow hair, which she incessantly combed with one hand, while she held a small mirror with the other. This female monster of the deep is described as having been a constant schemer of destruction to confiding navigators, or those who haunted unfrequented parts of the sea-shores.

Another of the vulgar superstitions of our ancestors was a belief, common to nations of Germanic origin, that the corpse of a murdered person would bleed on being touched by the person who was guilty of the murder. Strange to say, this species of evidence of guilt was at one time admitted in the Scottish criminal courts. The following incredible instance was communicated to Sir Walter Scott, and is given in his 'Minstrelsy of the Scottish Border' (vol. ii. p. 54). 'Two young men, going a-fishing in the river Yarrow, fell out, and so high ran the quarrel, that the one, in a passion, stabbed the other to the heart. Astonished at the rash act, he hesitated whether to fly, give himself up to justice, or conceal the crime; and in the end fixed on the latter expedient, burying the body of his friend very deep in the sands. As the meeting had been accidental, he was never suspected, although a visible change was observed in his behaviour, from gaiety to a settled melancholy. Time passed on for the space of fifty years, when a smith, fishing near the same place, discovered an uncommon and curious bone, which he put in his pocket, and afterwards showed to some people in his smithy. The murderer being present, now an old white-headed man, leaning on his staff, desired a sight of the little bone; but how horrible was the issue!—no sooner had he touched it, than it streamed with purple blood. Being told where it was found, he confessed the crime, was condemned, but was prevented by death from suffering the punishment due to his crime.' We need only add, that no evidence is given of the truth of this improbable tale, and it is, therefore, utterly unworthy of belief.

Ignorance has often been justly termed the mother of superstition; wherever mankind are most ignorant, or least accustomed to trace events to their natural and proximate causes, there do all kinds of superstitious notions luxuriantly flourish. When the mind once allows that matters of ordinary occurrence may take place by the interference of invisible agents, such as spirits, apparitions, devils, and so forth, there is obviously no limit to the actions they are supposed to

perform. Hence the number of events believed to be ominous of evil in unenlightened society. The appearance of two or three magpies, hares crossing one's path, the spilling of salt at table, the cracking of furniture, the howling of dogs, putting on the left shoe first, the ticking noise of an insect (the death-watch) in rotten wood, and a hundred other trifling occurrences, are imagined to be harbingers of evil.

THE ROSICRUCIANS.

In the early part of the seventeenth century, while the most degrading superstitions prevailed in Europe, there sprung up a sect in Germany under the name of Rosicrucians, who taught the wildest fancies. Though as far astray in their notions as the Demonologists and witch believers, their creed was more graceful. They taught that the elements swarmed not with hideous, foul, and revengeful spirits, but with beautiful creatures, more ready to do man service than to inflict injury. They taught that the earth was inhabited by Gnomes, the air by Sylphs, the fire by Salamanders, and the water by Nymphs or Undines; and that man, by his communication with them, might learn the secrets of nature, and discover all those things which had puzzled philosophers for ages—Perpetual Motion, the Elixir of Life, the Philosopher's Stone, and the Essence of Invisibility.

The Rosicrucians derived their name from Christian Rosencreutz, their founder, who died in 1484. This man was a professor of alchymy, or the pretended art of transmuting the baser metals into gold, which was spoken of as the discovery of the Philosopher's Stone. Being therefore a visionary, it was natural for such a person to found a religious sect, with doctrines of a fantastic kind. He is said to have bound his disciples, by solemn oaths, to keep his doctrine secret for one hundred and twenty years after his burial. Certain it is, they were never heard of under this name until the year 1604, when they first began to excite attention in Germany. Michael Meyer, an alchymist, and a physician of repute, was the first person of any note who lent the authority of his name to the promulgation of their tenets. He published at Cologne, in 1615, a work entitled 'Themis Aurea, hoc est de legibus Fraternitatis Roseæ Crucis,' which purported to contain all the laws and ordinances of the brotherhood.

The sect may be said to have now fairly commenced operations, the members calling themselves brethren of the Rosy Cross, by a play on the name of the founder. From the work of Meyer above cited, it appeared that, by perfect temperance and chastity, the brethren expected to hold converse with the elemental spirits; that they could render themselves invisible; draw gold and jewels from the bowels of the earth by incantation; be subject neither to disease nor death; and subsist without eating or drinking! They also laid claim to the power of foretelling all events, and of curing all diseases; and asserted that they possessed all wisdom and knowledge in a supreme degree. But beyond the confines of Cologne, Frankfort, and some other German cities, the name of the sect was not much known until the year 1623, when some of the brethren suddenly made their appearance in Paris, and frightened the good people of that capital from their propriety. On the 3d of March in that year, the following placard was stuck upon the walls, but how it came there nobody could tell:—

'We, the deputies of the principal college of the Brethren of the Rosy Cross, have taken up our abode, visible and invisible, in this city, by the grace of the Most High, towards whom are turned the hearts of the just. We show and teach without any books or symbols whatever, and we speak all sorts of languages in the countries wherein we deign to dwell, to draw mankind, our fellows, from error, and to save them from death.'

Viewed as impostors, the Rosicrucians were driven for a while from France, and their *philosophy*—for such it was called—found believers and preachers in Holland, England, and Italy. The most celebrated in the former country was Peter Mormius, an alchymist. In England, the high priest of the doctrine was one Dr Fludd, or, as he loved to call himself, Robertus à Fluctibus. This man had very strange notions upon medicine, which he had studied chiefly in the pages of Paracelsus. He warmly embraced the Rosicrucian creed; boasted of his intercourse with the elementary spirits, with whom he had conversations far surpassing those of Dr Dee with the angels; asserted that he could live without food for a couple of centuries, or until it pleased him to die; and that he could render himself invisible, and turn all metals into gold. But the most illustrious Rosicrucian was Joseph Francis Boni, an Italian, who wrote a treatise on the doctrines of the sect; and on this treatise the Abbé de Rellars founded his cabalistic romance, 'The Count de Gabolis,' which is now the best authority on the subject. According to this work, the leading doctrine of the Rosicrucians is, that the whole of creation—earth, air, water, fire—is occupied by spirits. 'The air is filled with an innumerable multitude of beings in human shape—proud and majestic in their appearance, but very mild in reality. They are great lovers of science, subtle, fond of rendering service to the wise, but great enemies of the foolish and the ignorant. . . . The seas and the rivers are inhabited in like manner. The ancient sages named these people the Undines, or the Nymphs. The males are few among them, but the females are in great number. Their beauty is extreme, and the daughters of man cannot be compared to them. The earth is filled almost to the centre with Gnomes—people smaller in stature, who guard the treasures of the mines, and keep watch over precious stones. These are very ingenious, very friendly to man, and easy to command. They furnish the children of philosophy (the Rosicrucians) with all the money they require, and think themselves sufficiently rewarded by our friendship. The Gnomides, their females, are small, but very beautiful and agreeable, and their dress is very curious. As regards the Salamanders, inhabitants of the fire, they also render service to the children of philosophy, but do not seek their company so eagerly as the others; and their wives and daughters are very rarely seen by mortal eyes. . . . . They are by far the most beautiful of the elementary spirits, being compounded of the most subtile and beautiful of all the elements. By becoming a member of our fraternity, you will be enabled to see and converse with all these glorious multitudes; you will see their mode of life, their manners, and make acquaintance with their admirable laws.' These beings are mortal; but 'a Nymph or a Sylphid becomes immortal, and has a soul like man, if she can inspire one of us with love towards her; thus a Sylph or a Gnome ceases to be mortal if one of the daughters of man will consent to marry him.'

The Rosicrucians taught that by the practice of virtue alone, man could hope to hold communion with the spirits of the elements: the attendant spirit in Comus teaches the same doctrine:—

> 'Mortals, that would follow me,
> Love Virtue; she alone is free:
> She can teach ye how to climb,
> Higher than the sphery chime;
> Or if Virtue feeble were,
> Heaven itself would stoop to her.'

There being a degree of elegance and poetry in these wild reveries of the Rosicrucians, they are believed to have furnished a basis for the Sylphs, Sylphids, and Ariels of Shakspeare, Milton, and other English poets. In recent times, literature is not slightly indebted to the superstitious conceptions of the Rosicrucians. It will suffice to mention the charming story of 'Undine,' by the Baron de la Motte Fouqué; 'Zanoni,' by Sir E. L. Bulwer; and, more recently, the popular poem of the 'Salamandrine,' by Dr Charles Mackay, to show how rich are the materials afforded to poets and romance writers by the fancies of this curious, and now all but forgotten sect.

KEY TO THE CALENDAR.

JANUARY.

JANUARY and FEBRUARY are said to have been added to the list of months by the second Roman king, Numa Pompilius, in the year before Christ 672. The name of the former month is unquestionably from Janus, the god of the year in the Roman mythology, to whom the first day was sacred, and in whose honour it was celebrated with riotous feastings and givings of presents. We learn from Ovid's Fasti, that a Roman workman did not spend the Kalends or 1st of January entirely in debauchery: he wrought a little at his trade, for the sake of good-luck throughout the year.

1. *Circumcision.*—A festival of the Romish Church, from about the year 487, and of the Church of England since 1550, in honour of the circumcision of Christ. The banks and public offices are shut on this day. As the first day of the year, it is celebrated throughout the modern Christian world with festive rejoicings, too often approaching or exceeding the bounds of propriety. In England, till a period not very remote, it was customary to usher in the year by drinking spiced liquor from the *Wassail Bowl*, so called from the Anglo-Saxon *Waes-hael* (Be healthy), the toast used on the occasion. The custom without the name still exists in Scotland. It was also customary on this day to give and receive gifts, originally with the superstitious design of securing good fortune for the year, and afterwards for affection and to promote good neighbourhood. Even the kings of England accepted presents from their courtiers on this morning. The 1st of January, under the name of *Le Jour de l'an*, continues in France to be distinguished by a universal system of present-giving, in which the royal family partakes. It has been calculated that sweetmeats to the value of £20,000 are sold in Paris on this day.

6. The *Epiphany*, a festival in honour of the manifestation of the infant Jesus to the three wise men of the East, who came to worship him. It began to be celebrated in 813. This continues to be observed as a festival in the English Church, and is marked by the shutting of many of the public offices. The popular name for the festival is *Twelfth Day*, with reference to its occurring twelve days after Christmas. Twelfth Day, and more particularly Twelfth Night, are distinguished by joyful observances. It is a tradition of the Romish Church, that the three wise men were kings, and many sets of names have been furnished for them, Caspar, Melchior, and Balthazar being the set best known: their remains were said to have been recovered in the fourth century by the Empress Helena, and the skulls are still shown, under circumstances of great pomp and ceremony, in the great church at Cologne. Perhaps it is owing to this idea of the regal rank of the wise men, that a custom has existed from early ages throughout Europe of choosing a person to act as king on Epiphany. In England this custom has blossomed out a little. Both a king and queen were chosen. It was done by placing beans on a large cake. The cake was divided among the company, and whoever of the male sex got a bean was king, whoever of the female sex queen. Latterly, other characters have been added, and these were expressed on slips of paper. The Twelfth Night cake continues to be eaten by merry companies, and the characters of king, queen, &c. being drawn in that manner, are supported amidst much jocularity till midnight. There is reason to suppose that the custom of choosing a king is also connected with ancient heathen rites, as in Rome a king of the Saturnalia was chosen by beans. Twelfth cake in England is generally covered with hardened white sugar and many little ornaments, and its abundant appearance in the windows of bakers and confectioners on this day never fails to arrest the attention of strangers. In Scotland there is not, so far as we can learn, the least trace of either a religious or popular observance of Twelfth Day.

Shakspeare has shown the respect in which the observances of 'Twelfth Night' were held in the Elizabethan age, by applying it as a title to one of his most delightful dramas, although he does not appear to have introduced any of the festivities peculiarly appropriate to that season, with the exception perhaps of the gross orgies of Sir Toby Belch and his boon companions.

Till the reign of George III., it was customary at court on Twelfth Night to hold a public assembly for playing the game of basset, in which the king and royal family took part, the winnings being for the benefit of the groom-porter, an officer who in those days had an especial charge of the games of chance played in the palace, at which he acted as umpire.

The day after Twelfth Day was a popular rustic festival, under the mock name of *St Distaff's* or *Rock Day*. (Rock is the appellation given to a quantity of lint put upon a distaff.) It seems to have been a sort of farewell to the festivities of Christmas.

18. *Septuagesima Sunday.*—[It is necessary here to mention that the Movable Feasts and Holy-Days of the church are nearly all regulated by Easter—that is, so long before or after Easter. Easter, the great festival of the church, is itself movable. According to canonical regulations, Easter-day is always the first Sunday after the full moon which happens upon, or next after, the 21st day of March; and if the full moon happens upon a Sunday, Easter Sunday is the Sunday after. The first of these movable feasts is Septuagesima Sunday, which occurs on January 18th, when Easter Sunday is on March 22d. In this place we propose setting down the movable feasts on the earliest days on which they ever occur; and Septuagesima Sunday is therefore put under January 18th. All the rest will follow in order, as in the calendar for a year on which they occur on the earliest possible day.] Quadragesima is an ancient name of Lent, as meaning the forty days' fast. The first Sunday in Lent hence received the name of Quadragesima. Early in the seventh century, Pope Gregory appointed three Sundays of preparation for Lent, and, assuming a decimal reckoning for convenience, they were respectively called, reckoning backwards, Quinquagesima, Sexagesima, and Septuagesima.

21. *St Agnes's Day*, a festival of the Church of Rome. The annals of canonisation present no image of greater sweetness and purity than St Agnes. She is described as a very young and spotless maid, who suffered martyrdom in the tenth persecution under Dioclesian, in the year 306. A few days after her death, her parents, going to make the offerings of affection at her tomb, beheld a vision of angels, amidst which stood their daughter, with a snow-white lamb by her side. She is therefore usually represented with a lamb standing beside her. Perhaps this legend has been partly founded on the resemblance of the name Agnes to *Agnus*, Latin for a *lamb*, for mere coincidences of sound often led to very important ideas in the middle ages. At Rome, on St Agnes's Day, during mass, and while the Agnus is saying, two lambs as white as snow, and covered with finery, are brought in and laid upon the altar. Their fleeces are afterwards shorn and converted into palls, which are highly valued.

Throughout the Christian world, and in England as much as elsewhere, it was customary for young women

on St Agnes's Eve to endeavour to divine who should be their husbands. This was called *fasting St Agnes's Fast*. The proper rite was to take a row of pins, and pull them out one after another, saying a pater-noster, and sticking one pin in the sleeve. Then going to rest without food, their dreams were expected to present to them the image of the future husband. In Keats's poem, entitled 'The Eve of St Agnes,' the custom is thus alluded to:—

> They told her how upon St Agnes' Eve,
> Young virgins might have visions of delight,
> And soft adorings from their loves receive,
> Upon the honied middle of the night,
> If ceremonies due they did aright;
> As, supperless to bed they must retire,
> And couch supine their beauties, lily-white;
> Nor look behind, nor sideways, but require
> Of heaven with upward eyes for all that they desire.

25. *Sexagesima Sunday*; eight weeks before Easter.

Conversion of St Paul.—A festival of the Romish and English churches, and in London a holiday at the public offices, excepting the Excise, Stamps, and Customs. The populace in former times thought this day prophetic as to the weather of the year:—

> If St Paul's Day be fair and clear,
> It doth betide a happy year;
> If blustering winds do blow aloft,
> Then wars will trouble our realm full oft;
> And if it chance to snow and rain,
> Then will be dear all sorts of grain.

In Germany, when the day proved foul, the common people used to drag the images of St Paul and St Urban in disgrace to duck them in the river.

30. *The Martyrdom of King Charles I.*—A holiday of the English Church, in whose behalf Charles is held to have lost his life; observed by the closing of all the public offices, except the Stamps, Excise, and Customs. A motion in the house of Commons in 1772, to repeal as much of the act of 12th Charles II., cap. 30, as relates to the ordering of the 30th of January to be kept as a day of fasting and humiliation, was lost by 125 against 97. The sheet in which the head of Charles was received upon the scaffold, presenting large black stains from his blood, together with his watch, are preserved at Ashburnham Church in the county of Sussex, having been given at the time to his friend Lord Ashburnham. The cap, of laced satin, which he wore on the scaffold, and which he directed to be sent to his friend the Laird of Carmichael in Scotland, passed through the hands of that gentleman's descendants, the Earls of Hyndford, and is now, or was lately, the property of Robert Logan, Esq., residing at New Lanark.

Natural History.—January, in our climate, is the coldest month of the year, on an average; for in some years February and March are both colder. The store of heat acquired in summer is now completely dissipated, and the sun has not yet attained sufficient power to replace it. In the central parts of the island of Great Britain, the general average of the thermometer this month is 37 degrees. Vegetation is nearly at a stand during January. Our ancestors thought it necessary that it should be a severe month, for the sake of the rest of the year. This mode of judging, however, is not confirmed by modern experience; for a mild winter is often followed by a warm summer. In sheltered situations a few flowers, as the crocus, mezereon, and polyanthus, are occasionally seen to blossom in the latter part of January; and about the same time (in England) the hedge-sparrow, thrush, and wren begin to pipe.

FEBRUARY.

The establishment of February as the second month of the year by Numa Pompilius has already been mentioned. According to Ovid in 'Fasti,' a curious record of Roman customs, all objects which were thought to have the effect of moral purgation in the religious ceremonials of that people were called Februa. Ceremonials of this kind took place at this season; hence the name of the month. The vanity of Augustus is said to have been the cause of this month being so much shortened. The arrangement of Julius Cæsar seems to have contemplated an alternation of months of thirty with those of thirty-one days. August was one of thirty days; but when Augustus gave it his name, he could not endure that it should be one of the shorter class, and therefore gave it an additional day, at the expense of February, already one of that class. Our Saxon ancestors called February *sprout kale*, from the sprouting of the cabbage, still called kale in Scotland.

1. *Quinquagesima Sunday*; seven weeks before Easter: called also Shrove Sunday.

2. *Candlemas Day*, or the Purification of the Virgin, a festival of the Church of Rome, and holiday in the English Church. It is said to have been founded upon Roman rites in which candles were carried. The early fathers of the church held it in commemoration of the attendance of Mary in the Temple, forty days after child-birth, as commanded by the law; and it was their custom on this day to bless candles and distribute them among the people, by whom they were carried in solemn procession. The saying of Simeon respecting the infant Christ in the Temple, that he would be a *light* to lighten the Gentiles, probably supplied an excuse for adopting the candle-bearing procession of the heathen, whose external religious practices the founders of the Romish Church made a practice of imitating, in order to take advantage of the habits of the people. Apparently in consequence of the celebration of Mary's purification by candle-bearing, it became customary for women to carry candles with them when, after child-birth, they went to be *churched*. It was to this custom that William the Conqueror referred in his famous remark on a jest of the king of France. The latter hearing that William seemed too fat and unwieldy to take the field, said, 'Methinks the king of England lies long in childbed.' 'When I am churched,' said William, 'there will be a thousand lights in France.' And history knows he made good his boast.

Candlemas Day is a holiday at the public offices, excepting the Stamps, Excise, and Customs. It is called a Grand Day in the Inns of Court, a Gaudy Day at the two universities, and a Collar Day at St James's, being one of the three great holidays, during the terms, on which all legal and official business is suspended.

There is an ancient superstitious notion, universal in Europe, that if Candlemas be a sunshiny day, the winter is not half finished. The Germans say—The badger peeps out of his hole on Candlemas Day, and if he finds snow he walks abroad; if he sees the sun shining, he draws back again into his hole. It is, or rather was, an ancient custom in Scotland for scholars on this day to make presents of money to their masters, and to enjoy it as a holiday.

3. *St Blaise's Day.*—St Blaise, who has the honour of a place in the Church of England calendar, was a bishop of Sebaste in Armenia, and suffered martyrdom in 316. He is the patron saint of the craft of woolcombers, and his name was once considered potent in curing sore throats. At Bradford there is still a septennial procession of the wool trade upon his day. Formerly, it was celebrated extensively by fires lighted on hills, and this is still done in Scotland on the previous evening, under the name of the Candlemas Blaze, the resemblance of the name Blaise to blaze having apparently suggested the practice.

Shrove Tuesday.—According to the plan already laid down, we place Shrove Tuesday upon this day of the month of February. As the day before the commencement of Lent, it has been from an early age celebrated throughout Christian Europe by feasting and merrymaking of such an extravagant nature, as to appear designed to impart a disgust with all such indulgences, in order to make the subsequent mortifications less felt. It is the concluding day of the time of Carnival, which in various Catholic countries is of greater or less extent, but celebrated with most distinction at Venice

and Rome. Carnival is obviously a term from *carne* and *vale*, as meaning a farewell to flesh, this article of food being unused during the whole of Lent. In these two Italian cities, and partially in many others, the Carnival is distinguished by shows, masquerades, races, and a variety of other exhibitions and amusements. The people may be said to live for several days in public. The wealthier classes parade about in their carriages, from which they pelt each other with sweetmeats. Whim and folly are tolerated in their utmost extent, so that only there be nothing said or done to burlesque ecclesiastical dignitaries. In Germany the masquesings and mummings of the time of Carnival, called there *Faschings*, are said to have given birth to the dramatic literature of the country.

The main distinction of Shrove Tuesday, in the early times of our own history, was the eating of pancakes made with eggs and spice. The people indulged in games at football, at which there was generally much license; also in the barbarous sport of *throwing at cocks*. In the latter case, the animal being tied by a short string to a peg, men threw sticks at it in succession, till an end was put to its miseries and its life at once. Cockfights were also common on this day, not only amongst the rustics, but at the public schools, the masters condescending to receive the defeated and slain cocks as a perquisite. The festive and mirthful observances of Shrove Tuesday are now much decayed; but the eating of pancakes or fritters still continues. And in some parts of the country, when young people have met together for the festivities of the evening, it is customary for the individual to whose lot it falls to make the pancakes, to put a ring in the dish containing the materials of which they are to be composed; and the person who has the good fortune to receive the cake containing the ring is to be first married.

4. *Ash Wednesday*, the first day in Lent, a holiday of the Church of England, observed by the closing of all the public offices, excepting the Stamps, Excise, and Customs. The palms or substitute branches, consecrated and used on Palm Sunday of one year, were kept till the present season of another, when they were burnt, and their ashes blessed by the priest and sprinkled on the heads of the people: hence the name given to the day. This sprinkling of ashes was performed with many ceremonies and great devotion. On this day also persons convicted of notorious sin were put to open penance. In England it is still a season for the saying of the 'commination' in the Prayer-book, by which the doers of certain kinds of wickedness are cursed.

8. *First Sunday in Lent.*—The Wednesday, Friday, and Saturday after this Sunday are called Ember Days, and the week in which they occur Ember Week. On Ember Days our forefathers ate no bread but what was baken in a simple and primitive fashion under hot ashes; hence the name. The other Ember Days of the year are the Wednesdays, Fridays, and Saturdays after the Feast of Pentecost, Holyrood Day (Sept. 14), and St Lucia's Day (Dec. 13).

14. *St Valentine's Day.*—St Valentine was a priest of Rome, martyred in the third century, but he seems to have had no connection with the notions and practices to which his day has since been given up. This, it is scarcely necessary to say, is a day thought to be especially devoted to the business of Cupid and Hymen. Possibly its being about the season when the birds choose their mates may be the origin of this belief. Antiquaries have also pointed out that the Lupercalia—feasts of ancient Rome in honour of Pan and Juno—were held at this time, and that amongst the ceremonies was a game in which young persons of the opposite sexes chose each other jocularly by lot.

St Valentine's Day is now almost everywhere a degenerated festival, the only observance of any note consisting in the sending of anonymous letters, by way of practical joke, and this confined very much to the humbler classes. The approach of the day is heralded by the appearance in the printsellers' shop windows of vast numbers of missives calculated for use on this occasion, each generally consisting of a single sheet of paper, on the first page of which is seen some ridiculous coloured caricature of the male or female figure, with a few burlesque verses below. More rarely, the print is of a sentimental kind, such as a view of Hymen's altar, with a pair undergoing an initiation into wedded happiness before it, while Cupid flutters above, and hearts transfixed with his darts decorate the corners. These are paltry frivolities compared with the observances of St Valentine's Day at no remote period. Ridiculous letters were then unknown; and if letters of any kind were sent, they contained only a courteous profession of attachment from some young man to some young maiden, honied with a few compliments to her various perfections, and expressive of a hope that his love might meet with return. But the true proper ceremony of St Valentine's Day was the drawing of a kind of lottery, followed by ceremonies not much unlike what is generally called the game of forfeits. Misson, a learned traveller of the early part of the last century, gives apparently a correct account of the principal ceremonial of the day. 'On the eve of St Valentine's Day,' he says, 'the young folks in England and Scotland, by a very ancient custom, celebrate a little festival. An equal number of maids and bachelors get together; each writes his or her true or some feigned name upon separate billets, which they roll up, and draw by way of lots, the maids taking the men's billets, and the men the maids'; so that each of the young men lights upon a girl that he calls his *valentine*, and each of the girls upon a young man whom she calls hers. By this means each has two valentines; but the man sticks faster to the valentine that is fallen to him than to the valentine to whom he is fallen. Fortune having thus divided the company into so many couples, the valentines give balls and treats to their mistresses, wear their billets several days upon their bosoms or sleeves, and this little sport often ends in love.'

In the various jesting ceremonies of the day, there always seems to have been a disposition to believe that the person drawn as a valentine had some considerable likelihood of becoming the associate of the party in wedlock. At least we may suppose that this idea would be gladly and easily arrived at, where the party so drawn was at all eligible from other considerations. The common people seem to have imagined that an influence was inherent in the day, which rendered in some degree binding the lot or chance by which any youth or maid was now led to fix attention on a person of the opposite sex. It was supposed, for instance, that the first unmarried person of the other sex whom one met on St Valentine's morning in walking abroad, was a destined wife or husband.

15. *Second Sunday in Lent.*

22. *Third Sunday in Lent.*

24. *St Matthias the Apostle.*—A festival of the Church of England. St Matthias was chosen by lot after the Crucifixion, in place of the traitor Judas (Acts i. 23).

Natural History.—The popular voice allots a course of snow, rain, and their hybrid sleet, to this month, and considers it necessary that such should be its features, in order that all the powers of humidity may be exhausted before the commencement of March, when an opposite kind of weather is looked for. It is indeed true that frost, followed by regular thaw, and that succeeded by the sharp drying winds of March, bring the ground into the most favourable state for ploughing and seed-sowing. The general average of the thermometer is 39 degrees; that of different years varies from 32 to 42. The snowdrop and crocus are the chief ornaments of our flower-borders at this season. The primrose will also flower; the hepatica come forth in some strength; and in mild seasons several other of our earlier flowers and flowering shrubs begin to show blossom. In England the raven and rook begin to build their nests; the house-pigeon has young; the ringdove coos, the goldfinch sings, and thrushes pair. In Scotland the notes of the thrush and blackbird give token of the approach of spring.

MARCH.

March, which with the ancients ranked the first month of the year, was named in honour of Mars, the god of war, and the supposed father of the founder of Rome. Our Anglo-Saxon ancestors called it *Lenct Monath*—that is, Lent or Spring Month.

1. *Mid Lent Sunday.*—A holiday of the Church of England. It was considered as incumbent upon all true Christians on this day to pay a visit, if possible, to their mother church, or church of their native parish, and there make some small offering. The epistle for the day accordingly contains an appropriate allusion—*Hierosolyma mater omnium*, Jerusalem the mother of all (Gal. iv. 21). And it was customary on the same day for people to visit their parents, carrying with them some gift, and receiving the parental blessing in return, together with a mess of furmety—that is, a porridge composed of whole grains of wheat, boiled in milk, and sweetened and spiced. This practice was called 'going a-mothering,' and the day was sometimes called *Mothering Sunday*. The festival, with all its peculiar observances, is supposed to have taken its rise in the heathen festival of the Hilaria, celebrated by the ancient Romans in honour of the mother of the gods, on the ides of March.

St David's Day.—The interest attached to this saint and his day is confined to the Welsh, whose patron saint St David is considered. The most rational accounts of St David represent him as Archbishop of Menevy (since, from him, called St David's) in the sixth century. He is said to have been the illegitimate son of a prince of Cardigan, and uncle of the famous, but more than half fabulous, King Arthur. Learning, and more particularly asceticism, the great sources of promotion in those days, raised him to high esteem and ecclesiastical rank, and gave him the reputation of a power to perform miracles. At a synod called at Brevy in Cardigan, in 519, in consequence of the Pelagian heresy, he made an eloquent and convincing display against the erroneous doctrines, which were therefore condemned. He died in 544, at an advanced age, and was buried in the church of St Andrew, but in 962 his remains were transferred to Glastonbury Abbey.

While the Welsh venerate the memory of St David, they are unacquainted with our idea of him as their patron saint, a notion which has sprang up in consequence of the popular fiction of the Seven Champions of Christendom. They observe the 1st of March as the anniversary of his death. On this day all true Welshmen, whether in their own country or far removed from it, make it a point of conscience to wear a leek in their hats; and this custom is alluded to in writings of considerable antiquity. It has also been made effective use of by Shakspeare in his historical drama of 'King Henry V.;' and the heroic cudgelling which he there represents the choleric Welshman Fluellen as having administered to Ancient Pistol when he compelled him to eat the leek which he had mocked at on 'St Tavy's Day,' has given rise to a proverbial saying; for of an individual who has been forced to do anything contrary to his own inclination, it is by no means uncommon to say that he has been made 'to eat his leek.' How the leek has become connected with St David and the affections of Welshmen is not ascertained. The most probable story is, that at a great battle between the Welsh and Saxons in the sixth century, the former, by advice of St David adorned their hats with leeks, for the sake of distinction from their enemies, taking the herb from a neighbouring field, where they grew in abundance. The victory gained by the Welsh being partly attributed to this cause, the leek was ever after held in veneration, and associated with the name of St David. 'The most honourable and loyal society of Ancient Britons,' instituted in London in 1714, and who support a school in the metropolis for the support and education of poor Welsh children, have an annual procession on St David's Day, on which occasion each member wears a representation of the leek in his hat, the marshals in front being decorated in like manner. In the household expenses of the Princess Mary, in 1544, there is entered a gift of fifteen shillings to the yeomen of the king's guard for bringing a *leek* to her grace on St David's Day.

8. The *Fifth Sunday in Lent.*—It was popularly distinguished as *Care* or *Carling Sunday*, terms which appear to be of very dubious import. The peasantry and yeomanry used to steep peas and afterwards parch them, and then, frying them with butter, made a feast of them on the afternoon of this day. It is thought not unlikely that the custom bore some reference to the superstitious notions which the ancients entertained respecting beans, as containing the souls of the departed. The peas, as eaten in the north of England, were called *carlings*. We may presume that the day took its name from this word, *carling* being in time softened into *Care*. It figures in the following old rhyme which enumerates the Sundays of Lent by popular appellations—

> Tid, Mid, and Miseri,
> Carling, Palm, and good Pace-day.

The three first words are supposed to have been derived from the beginnings of certain psalms—thus, *Te deum*, *Mi deus*, *Miserere* mei.

15. *Palm Sunday*, called in the English Prayer-book the Sunday next before Easter; also sometimes called Passion Sunday, as being the commencement of Passion Week, or the week celebrative of the sufferings or passion of our Lord. It is a festival of great antiquity and a partly joyous character, as more particularly commemorating the brilliant though short-lived popularity of the reception which Christ met with on entering Jerusalem immediately before his passion. On this day, in Catholic countries, the priests bless branches of palm, or some other tree, which are then carried in procession, in memory of those strewed before Christ at his entrance into the holy city. The procession is as splendid as circumstances will admit of; and after it is done, the boughs used on the occasion are burnt, and their ashes preserved, that they may be laid on the heads of the people next Ash Wednesday, with the priest's blessing.

After the Reformation, 1536, Henry VIII. declared the carrying of palms on this day to be one of those ceremonies not to be contemned or dropped. The custom was kept up by the clergy till the reign of Edward VI., when it was left to the voluntary observance of the people. Fuller, who wrote in the ensuing age, speaks of it respectfully, as 'in memory of the receiving of Christ into Hierusalem a little before his death, and that we may have the same desire to receive him into our hearts.' It has continued down to a recent period, if not to the present day, to be customary in many parts of England to go *a-palming* on the Saturday before Palm Sunday; that is, young persons go to the woods for slips of willow, which seems to be the tree chiefly employed in England as a substitute for the palm, on which account it often receives the latter name. They return with slips in their hats or buttonholes, or a sprig in their mouths, bearing the branches in their hands. Not many years ago, one stall-woman in Covent-Garden market supplied the article to a few customers, many of whom, perhaps, scarcely knew what it meant. Slips of the willow, with its velvety flower-buds or catkins, are still stuck up in some rural parish churches in England.

17. *St Patrick's Day*, a high festival of the Romish Church. The interest attached to this saint and his day is, however, chiefly confined to the Irish, whose patron saint he is considered; though that term, as in the case of St David, is of modern and English origin. The Irish venerate St Patrick as the person who introduced Christianity into their country. He is said to have been born at Kilpatrick, near Dumbarton in Scotland, and to have first visited Ireland as a boy and a

prisoner. Afterwards travelling into Gaul and Italy, and growing up as a learned priest, he was commissioned by Pope Celestine to convert the Irish, a task which he immediately commenced, and carried into effect with unexampled ardour and perseverance. He travelled throughout the whole of Ireland, preaching everywhere to the barbarous people, whom he baptised in multitudes. He also ordained clergy to preside over them, gave alms to the poor, made presents to the kings, founded monasteries, and, in short, established the Christian religion and a full apparatus for its support in Ireland. Monkish annals and popular tradition attribute to him an immense number of miracles, most of which have probably no basis in fact. He died, in 452, at Down in Ulster, and was there buried.

As the Welsh are solicitous to display the leek on St David's Day, so are the Irish to show the *shamrock* on that of St Patrick. The shamrock is a bunch of trefoil, a species of grass. It is associated with St Patrick and his day in consequence, as popular story goes, of the saint having made a very adroit use of the plant in his first preaching, immediately after landing. The people being staggered by the doctrine of the Trinity, and disposed to show some violence to him, he took up a trefoil growing by his side, and illustrated the point by showing its three blades growing on one stalk; whereupon they were immediately convinced, and became converts. In Dublin, St Patrick's Day is, or was lately, a scene of festivity and mirth unparalleled. 'From the highest to the lowest,' says Mr Hone, 'all seem inspired by the saint's beneficence. At daybreak flags fly from the steeples, and the bells ring out incessant peals till midnight. The rich bestow their benevolence on the poor, and the poor bestow their blessings on the rich, on each other, and on the blessed St Patrick. The "green immortal" shamrock is in every hat. Sports of manly exercise exhibit the capabilities of the celebrated shilelah. Priestly care soothes querulousness; laughter drowns casualty; lasses dance with lads; old women run about to share cups of consolation with each other; and by the union of wit, humour, and frolic, this miraculous day is prolonged till after the dawn of next morning.'

19. *Maundy Thursday*, called also Shere Thursday, the day before Good Friday. Its name of Shere Thursday appears to have arisen from the practice which the priests had of shearing their hair on this day, to make themselves as trim as possible for Easter. The other name is more doubtful, but seems most probably to have been derived from *maund*, an old English word for a basket, in consequence of the distribution of gifts on this day in baskets—the word *maundy*, used by old authors for alms or gifts, being apparently derived in its turn from the practice of this day. The religious customs of the day consisted in works of humility, and in conferring gifts on the poor. The object seems to have been to commemorate, or imitate, the humility of Christ in washing the feet of his disciples—the giving of maundies being an additional good work. Cardinal Wolsey, at Peterborough Abbey, in 1530, 'made his maund in our lady's chapel, having fifty-nine poor men whose feet he washed and kissed; and after he had wiped them, he gave every of the said poor men twelve pence in money, three ells of good canvas to make them shirts, a pair of new shoes, a cast of red herrings, and three white herrings; and one of these had two shillings'—the number of the poor men being probably in correspondence with the years of his age. Even royalty condescended to this practice. The king of England was accustomed on Maundy Thursday to have brought before him as many poor men as he was years old, whose feet he washed with his own hands, after which his majesty's maunds, consisting of meat, clothes, and money, were distributed amongst them. Queen Elizabeth, when in her thirty-ninth year, performed this ceremony at her palace of Greenwich, on which occasion she was attended by thirty-nine ladies and gentlewomen. Thirty-nine poor persons being assembled, their feet were first washed by the yeomen of the laundry with warm water and sweet herbs, afterwards by the sub-almoner, and finally by the queen herself, kneeling; these various persons, the yeomen, the sub-almoner, and the queen, after washing each foot, marked it with the sign of the cross above the toes, and then kissed it. Clothes, victuals, money, and other gratuities were then distributed.

This strange ceremonial, in which the highest was for a moment brought beneath the lowest, was last performed in its full extent by James II. King William left the washing to his almoner; and such was the arrangement for many years afterwards. 'Thursday, April 15 [1731], being Maundy Thursday, there was distributed at the Banqueting House, Whitehall, to forty-eight poor men and forty-eight poor women (the king's [George II.] age being forty-eight), boiled beef and shoulders of mutton, and small bowls of ale, which is called dinner; after that large wooden platters of fish and loaves—namely, undressed, one large old ling, and one large dried cod; twelve red herrings and twelve white herrings, and four half-quarter loaves. Each person had one platter of this provision; after which were distributed to them shoes, stockings, linen and woollen cloth, and leathern bags, with one penny, twopenny, threepenny, and fourpenny pieces of silver and shillings—to each about four pounds in value. His Grace the Lord Archbishop of York, Lord High Almoner, performed the annual ceremony of washing the feet of a certain number of poor in the Royal Chapel, Whitehall, which was formerly done by the kings themselves, in imitation of our Saviour's pattern of humility.' For a considerable number of years the washing of the feet and other ceremonies has been entirely given up; and since the beginning of the reign of Queen Victoria, an additional sum of money has been given in lieu of provisions.

20. *Good Friday*.—This day, as the presumed anniversary of the Crucifixion, has for ages been solemnly observed throughout Christian Europe, the only exceptions being in Presbyterian countries, such as Scotland. In Catholic times, the observances of the day in England were of the same character with those which are still maintained in many parts of the continent. It is still a solemn festival of the Church of England, and the only one besides Christmas which is honoured by a general suspension of business. Strictly observant Church-of-England people abstain from all kind of animal food, even from cream to tea; such, we are informed by Boswell, was the custom of Dr Johnson. The churches are in general well attended, and it is considered proper to appear there in black clothes.

Amongst the usages of this day was a strange ceremony of creeping to the cross, which even the king was not exempt from performing. The king also distributed rings at Westminster Abbey for the cure of the cramp. The ceremonious burying of a crucifix, as representing the burial of Christ, is calculated to give less surprise. It is still in some measure kept up in the service of the *Tenebræ*, performed in St Peter's at Rome. It was also customary at great churches to have a small building in the form of a tomb, in which the host was this day deposited, by way of representing the burial of Christ. In England, and perhaps also in other countries, eggs and bacon were the kinds of food appropriate to Good Friday. The eggs laid on this day were thought to have the power of extinguishing any fire into which they might be thrown. In modern times, the only species of viands connected with Good Friday in Britain is the well-known hot cross bun, a small spiced cake, marked with the figure of a cross, and sold not only in bakers' shops but by persons traversing the streets with baskets.

In London, as well as in almost every other considerable town in England, the first sound heard on the morning of Good Friday is the cry of 'Hot Cross Buns!' uttered by great numbers of people of a humble order, who parade the streets with baskets containing a plentiful stock of the article, wrapped up

in flannel and linen to keep it warm. The cry, which is rather musical, is strictly—

> Hot cross buns—
> One a penny, buns—two a penny, buns;
> One a-penny, two a-penny—hot cross buns.

Hucksters of all kinds, and many persons who attempt no traffic at any other time, enter into the business of supplying buns on Good Friday morning. They make a stir on the streets, which lasts till church time, and it is resumed in the afternoon. About a century ago there was a baker's shop at Chelsea, so famous for its manufacture of excellent buns, that crowds of waiting customers clustered under its porch during a great part of the day. The buns were brought up from the oven on small black tin trays, and so given out to the people. The king himself had stopped at the door to purchase hot cross buns, and hence the shop took the name of the Royal Bun-House. As always happens in London when anything original and successful is struck out, the Royal Bun-House soon obtained a rival, and was obliged to advertise as the Old Original Royal Bun-House. The wars of these two houses, like those of York and Lancaster, have long since been hushed to rest; and we find it stated in a recent work [Mr Hone's amusing 'Every-Day Book,' vol. i. p. 404] that neither of them is now distinguished for this article above the other bakers' shops of Chelsea.

In old times, Good Friday was distinguished in London by a sermon preached at *Paul's Cross* (a wooden pulpit placed on stone steps, and surmounted by a cross, which stood till the time of the civil war, in the open air, near the north-east corner of St Paul's Cathedral). The sermon was generally on the subject of Christ's passion. Connected with it, two or three others were preached on Monday, Tuesday, and Wednesday, in Easter week, at the Spital in Spitalfields, where the Lord Mayor and all the most eminent persons in London generally attended. The 'Spital sermons' are still kept up, but take place in St Bride's Church.

21. *Easter Eve.*—In Catholic times, it was customary to put out all fires on this day, and light them anew from flint. The priest blessed the new fire, and a brand from it was thought to be an effectual protection against thunder-strokes. A large wax taper, called the Pascal Taper, was also blessed, and lighted beside the representative sepulchre above-mentioned, and there a vigil was kept till morning. The taper used on one of these occasions in Westminster Abbey church is said to have been 300 pounds in weight.

22. *Easter Day*, a solemn festival in celebration of the Resurrection. The word used by us is from the Saxon *oster* (rising). Easter is observed with much ceremonial, not only throughout Catholic Europe, and in the countries where the Greek church is established, but in Turkey and the Mohammedan countries along the coast of Africa. The festival is an engraftment upon the Jewish Passover, the name of which (*pascha*) is still applied to it in almost every country besides England. The Catholic observances of Easter are of an elaborate character. At Rome, the Pope is carried in state to perform high mass in St Peter's, from the balcony of which he afterwards blesses the people assembled in the piazza below—perhaps one of the most imposing religious spectacles which the world anywhere presents. In England, before the Reformation, the Catholic observances of Easter were as fully enacted as in any other country. Early in the morning, a sort of theatrical representation of the Resurrection was performed in the churches, the priests coming to the little sepulchre where, on Good Friday, they had deposited the host, which they now brought forth with great rejoicings, as emblematical of the rising of the Saviour. In the course of the day, the clergy had a game at ball in the church, a custom of which it is now difficult to believe that it ever could have existed.

At present, in large seats of population, Easter Sunday is distinguished by little besides the few peculiarities of the service, and the custom of going to church in attire as gay as possible. But in rural districts there still exist a few vestiges of old superstitions and customs connected with the day. It was once a general belief, and probably still is so in a few out-of-the-way places, that on Easter morning the sun danced or played immediately after his rising. People rose early, and went into the fields to see this supposed phenomenon.

The viands appropriate to Easter Day in the old times were, first and above all, eggs, then bacon, tansy pudding, and bread and cheese. The origin of the connection of eggs with Easter is lost in the mists of remote antiquity. They are as rife at this day in Russia as in England. There it is customary to go about with a quantity, and to give one to each friend one meets, saying, 'Jesus Christ is risen,' to which the other replies, 'Yes, he is risen,' or, 'It is so of a truth.' The Pope formerly blessed eggs to be distributed throughout the Christian world for use on Easter Day. In Germany, instead of the egg itself, the people offer a print of it, with some lines inscribed. Formerly, the king of England had hundreds prepared to give to his household: in a roll of the expenses of Edward I. the following occurs, in the accounts of Easter Sunday, in the eighteenth year of his reign—'Four hundred and a-half of eggs, eighteenpence.' The custom is supposed to have been originally Jewish.

At this day, the Easter eggs used in England are boiled hard in water containing a dye, so that they come out coloured. The boys take these eggs and make a kind of game, either by throwing [bowling] them to a distance on the green sward—he who throws oftenest without breaking his eggs being the victor—or hitting them against each other in their respective hands, in which case the owner of the hardiest or last surviving egg gains the day.

It was at one time customary to have a gammon of bacon on this day, and to eat it all up, in signification of abhorrence of Judaism. The tansy seems to have been introduced into Easter feasts as a successor to the bitter herbs used by the Jews at the Passover. It was usually presented well sugared.

It was a custom in the thirteenth century to seize all ecclesiastics found walking abroad between Easter and Pentecost, and make them purchase their liberty with money. This was an acting of the seizure of the apostles after Christ's passion. We have still what appears to be a relic of this fashion in a custom which exists in various parts of England. A band of young men go abroad, and whatever female they meet they take hold of her, and pull off her shoes, which are only returned to her upon her paying some trifling forfeit. In Durham it is done by boys, who, on meeting any woman, accost her with, 'Pay for your shoes, if you please.' The trifling sums which they thus collect are spent in a feast at night. At Ripon, celebrated for its manufacture of spurs, travellers riding through the town are stripped of those articles, which in like manner they have to redeem. On Easter Monday, the women make a return by going abroad in groups, and causing the men to redeem their shoes.

'Lifting at Easter' is another old custom, which may be presumed to have originated in a design of dramatising the events connected with Christ's passion. It consisted in hoisting individuals up into the air, either in a chair or otherwise, until they relieved themselves by a forfeit. A curious record makes us aware that on Easter day, in the eighteenth year of the reign of Edward I., seven ladies of the queen's household went into the king's chamber and *lifted him*, for which fourteen pounds appears to have been disbursed as a forfeit. The men lifted the women on Easter Monday, and the women claimed the privilege of lifting the men in return on the ensuing day. Three hoists were always given, attended by loud huzzas.

23. *Easter Monday.*—This and the ensuing day are holidays of the church. The week commencing with Easter, and called thence Easter week, is a season of festivity and partial suspension of business; and the

earlier days of it after Easter itself are in London devoted by the working-classes to recreation and amusement, which they chiefly seek for at Greenwich Fair, and in excursions to taverns near town.

25. *The Annunciation of our Lady*, a festival of the Church of England. It is commonly called in England *Lady-Day*, as an abridgment of the Day of our Blessed Lady. This festival is in celebration of the incarnation of Christ, or the announcement by the Holy Ghost to Mary that she should bear the Son of God. The Annunciation is observed as a holiday at all the public offices, excepting the Stamps, Excise, and Customs. It is a gaudy day in the Romish Church. In Catholic countries the service of this day resounds with 'Hail, Mary!' uttered in a strain of the highest enthusiasm. The 25th of March is held as a quarter-day for many commercial purposes in England.

29. The first Sunday after Easter, called *Low Sunday*, because it is Easter day repeated, with the church-service somewhat abridged or *lowered* in the ceremony from the pomp of the festival the Sunday before.

Natural History.—March is eminently a spring month, and the season more particularly devoted to sowing. Its general character, as far as the extreme uncertainty of our climate warns us to speak, is dryness. The frosts of winter, followed by the sharp dry winds of this month, have the effect of pulverising the soil, and fitting it for the reception of the seed. The value of the weather approp[illegible] to March is expressed in the saying, 'A peck of M[illegible]et is worth a king's ransom.' This month is a[illegible]cted to undergo a change between its beginning [illegible]d its end. The English say 'March comes in like a lion, and goes out like a lamb;' the Scotch version of the same idea is, 'March comes in with an adder's head, and goes out with a peacock's tail.' The general average temperature of March (41 degrees) is so little above that of February, as to make the greater dryness appear to arise in but a small degree from heat. There is in March a general bursting of the trees into leaf, of the meadows into flower, and partly, it may be added, of the birds into song. It is the season for planting gardens, as well as sowing the fields, although in many situations there are few which may not be deferred for a little longer without disadvantage.

APRIL.

The Romans gave this month the name of *Aprilis*, from *aperio*, because it was the season when things *opened*. By the Saxons it was called Ostre month, probably from the same word from which Easter is supposed to have been derived. The Dutch and Germans term it Gras month.

1. *All Fool's Day.*—From a very early age, this day has been considered as one set apart for the exercise of all kinds of mirthful folly and practical joking: the term given to it we may hold as a travestie of the festival of All Saints' Day. The custom of playing off little tricks on this day, whereby ridicule may be fixed upon unguarded individuals, appears to be universal throughout Europe. In France, one thus imposed upon is called *Un poisson d'Avril* (an April fish). In England, such a person is called an April fool; in Scotland, a gowk. Gowk is the Scotch for the cuckoo, and also signifies a foolish person, being in fact from the same root as the English word gawky. The favourite jest in Britain is to send one upon an errand for something grossly nonsensical—as for pigeon's milk, or the History of Adam's Grandfather; or to make appointments which are not to be kept; or to call to a passer-by that his latchet is unloosed, or that there is a spot of mud upon his face. When he falls into the snare, the term April fool or gowk is applied with a shout of laughter. It is very remarkable that the Hindoos practise precisely similar tricks on the 31st of March, when they have what is called the Hull Festival.

7. The fifteenth day after Easter is marked by an old English festival, to which the inexplicable term *Hock Day* is applied. The custom peculiar to the day consisted in the men and women of rural districts going out to the roads with ropes, and intercepting passengers jocularly, and raising money from them, to be bestowed, it may well be presumed, in pious uses.

23. *St George's Day* in the Romish calendar. St George is held as the tutelar or patron saint of England. He is said to have been a native of Cappadocia; and it is tolerably certain that he was held in great veneration by the Greeks in the fourth century. Throughout the countries once constituting the Lower Empire, in the Crimea, and in Tartary, he has for ages been worshipped; in the former countries as a saint, in the latter as a deity. By all he is invariably represented as a man on horseback, spearing a dragon. With a regard apparently to his military character, our Edward III. adopted his name as his war-cry, and his figure as a badge in connection with the order of the garter; thus originated the association of St George with England, since in many respects so conspicuous. It is remarkable that in Russia St George is as much a favourite saint as he is in England. The sovereigns of that country have borne his emblem from a time previous to Edward III. The derivation of Russian Christianity from the Greek Church suggests a ready explanation of this fact. The English do not mark the day of their national saint with any of those observances which give St David's and St Patrick's days so peculiar a character in Wales and Ireland; but it was customary at no distant period for people of fashion to wear a blue coat on this day in honour of St George.

25. *St Mark the Evangelist's Day*, a holiday of the Church of England. It was once customary to bless the fruits of the earth on this day; hence, perhaps, a notion amongst the peasantry, that to plough or do any other work on St Mark's Day will be apt to bring down Divine wrath. The eve of St Mark was distinguished by some superstitious ceremonies. Maidens met to make the *dumb cake*. This was done by a number not exceeding three, and it was to be done in silence. At twelve o'clock, the cake being prepared, each broke off a piece and ate it; then walked backwards to her sleeping-room. It was thought that those who were to be married would hear a noise as of a man approaching. Those who heard nothing were to remain unmarried. Watching the church porch was another practice of this eve. A man went fasting and took his station there before midnight. It was thought that during the hour between twelve and one he would see the spirits of all who were to die in the parish during the ensuing year walk into church, in the order in which they were to die, those who were to perish by violence making gesticulations appropriate to the peculiar modes of their death. There were similar superstitions regarding the Eve of St John (June 24); which see.

26. *Rogation Sunday.*—The Sunday before Ascension is always so called. The three days immediately following are also called Rogation Days. The Archbishop of Vienne in Dauphiné, about the year 469, caused the litanies or supplications to be said on those days for deliverance from earthquakes, by which his city had been much injured. The days were thence called Rogation—that is, supplication—days. They were distinguished by great processions of ecclesiastics throughout the bounds of their districts.

30. *Ascension Day, or Holy Thursday*, a holiday of the Church of England, observed by the shutting of most of the public offices. This festival, which invariably occurs on the fortieth day after Easter, is designed to celebrate the ascension of Christ into Heaven. It was once distinguished by great festivities. On this day, also, there was a custom of the parish schoolmaster going with his pupils round the bounds of the parish, the pupils carrying peeled willow wands, wherewith they struck the boundaries. This was an expedient for keeping those boundaries in memory, in an age when more accurate means of attaining the same end did not exist.

Natural History.—Mild weather, with genial showers, is the character usually given to April; but in modern

times the weather is often the reverse of this, being dry, with cold winds. On the average, indeed, there is more north wind and *less rain* this month than in any other. The progressive advance of temperature from winter toward summer is very apparent this month, the general average height of the thermometer being 46 degrees. April is a busy month in the fields, and the usual seed-time for barley. In the gardens it is the busiest time of the year for seed-sowing.

MAY.

Among the Romans, this was the *mensis maiorum*, or month dedicated to the elder persons of their community, while the next was the *mensis juniorum*, or month of the younger people. Thus most probably arose the names of May and June. Others suppose that May would derive its name from Maia, the mother of Mercury, who was worshipped on the first day; but it is not impossible that Maia and her day were afterthoughts, when the real origin of the name of May was out of mind. The Saxons are said to have given this month the strange-looking name of Trimilchi, because they then began to milk their cows three times a day. The Romans believed it to be unlucky to marry in May.

1. *St Philip and St James the Less*, a holiday of the Church of England.

As a popular festival, under the name of *May-Day*, this day has been celebrated from time immemorial. The celebration must doubtless have been prompted by nature herself: the time of the young flower and leaf, and of all the promise which August fulfils, could not but impress the minds of the simplest people, and dispose them to joyful demonstrations in word and act. The sun, as the immediate author of the glories of the season, was now worshipped by the Celtic nations under the name of Baal; hence the festival of *Beltane*, still faintly observed in Ireland and the Highlands of Scotland. Even in Ayrshire, they kindled Baal's fire in the evening of May-day till about the year 1790. The Romans held games called Floralia, at which there was great display of flowers, and where women danced, if we are to believe Juvenal, only too enthusiastically. The May-day jollities of modern Europe seem to be directly descended from the Floralia.

In England, we have to go back a couple of hundred years for the complete May-day; since then it has gradually declined, and now it is almost extinct. When it was fully observed, the business of the day began with the day itself—that is to say, at midnight. We have the authority of Shakspeare, that with the populace of England it was impossible to sleep on May morning. Immediately after twelve had struck, they were all astir, wishing each other a merry May, as they still, at the same hour on the 1st of January, wish each other a happy new year. They then went forth, with music and the blowing of horns, to some neighbouring wood, where they employed themselves in breaking down and gathering branches. These they brought back at an early hour, and planted over their doors, so that by daylight the whole village looked quite a bower. The citizens of London went a-Maying in this fashion, notwithstanding their comparative distance from woods. They went marshalled in parishes, or in unions of two or three parishes; their mayor and aldermen went also; and we read of Henry VIII. and Queen Catharine riding from Greenwich to Shooter's Hill, attended by lords and ladies, to join in the sport. In some places, the Mayers brought home a garland suspended from a pole, round which they danced. In others, and this was a more general custom, there was an established May-pole for the village, which it was their business to dress up with flowers and flags, and dance around throughout all the latter part of the day. A May-pole was as tall as the mast of a sloop of fifty tons, painted with spiral stripes of black and white, and properly fixed in a frame to keep it erect. Here lads and lasses danced in a joyful ring for hours to the sounds of the viol, and masquers personating Robin Hood, Little John, Maid Marian, and others of the celebrated Sherwood company of outlaws, as well as morris-dancers, performed their still more merry pranks. May-poles, as tending to encourage levity of deportment, were condemned by the Puritans in Elizabeth's time; James I. supported them in his Book of Sports; they were altogether suppressed during the time of the Commonwealth, but got up again at the Restoration. Now change of manners has done that which ordinances of parliament could not do. This object, so interwoven with our national poetical literature, is all but rooted out of the land.

A certain superstitious feeling attached to May-day. The dew of that morning was considered as a cosmetic of the highest efficacy; and women, especially young women, who are never unwilling to improve in this respect, used to go abroad before sunrise to gather it. To this day there is a resort of the fair sex every May-morning to Arthur's Seat near Edinburgh, for the purpose of washing their faces with the dew. Mr Pepys, in his 'Diary,' gravely tells us of his wife going to Woolwich for a little air, and to gather May-dew, 'which Mrs Turner hath taught her is the only thing in the world to wash her face with.' Scott, in his 'Discovery of Witchcraft,' speaks of a sprig of hawthorn gathered on May-day, and hung in the entry to a house, as a presumed preservative against all malign influences. There was also a practice of making fools on May-day, similar to what obtains on the first of the preceding month. The deluded were called *May-goslings*. It was held unlucky to marry in May—a notion which, as already mentioned, existed among the Romans. It still exists in Scotland, where very few marriages take place in May, the higher classes being equally superstitious on the subject with the lower.

In London, as has been said, May-day was once as much observed as it was in any rural district. There were several May-poles throughout the city, particularly one near the bottom of Catharine Street in the Strand, which, rather oddly, became in its latter days a support for a large telescope at Wanstead in Essex, the property of the Royal Society. The milkmaids were amongst the last conspicuous celebraters of the day. They used to dress themselves in holiday guise on this morning, and come in bands with fiddles, whereto they danced, attended by a strange-looking pyramidal pile, covered with pewter plates, ribbons, and streamers, either borne by a man upon his head, or by two men upon a hand-barrow: this was called their *garland*. The young chimney-sweepers also made this a peculiar festival, coming forth into the streets in fantastic dresses, and making all sorts of unearthly noises with their shovels and brushes. The benevolent Mrs Montagu, one of the first of the class of literary ladies in England, gave these home slaves [their liberation was effected in 1841] an annual dinner on this day, in order, we presume, to aid a little in reconciling them to existence. In London, May-day still remains the great festival of the sweeps, and much finery and many vagaries are exhibited on the occasion.

The Robin Hood games and morris-dances, by which this day was distinguished till the Reformation, appear, from many scattered notices of them, to have been entertainments full of interest to the common people. Robin has been alternately styled in at least one document as the King of May, while Maid Marian seems to have been held as the Queen. The various scattered particulars respecting these festivities, which make but dry reading by themselves, have been wrought up to some advantage by Mr Strutt in his 'Queen Hoo Hall,' where he describes May-day as celebrated by the servants and dependants of an English baron of the fifteenth century.

3. *The Invention of the Cross*, a festival of the Romish Church, designed to commemorate the finding of the cross upon which Jesus had suffered, by St Helena. The festival is shortly called *Rood Day*.

10. *Whit-Sunday*, a festival of the Church of England, designed to commemorate the descent of the Holy Spirit

upon the apostles on the day of Pentecost. In Catholic countries, on this day, while the people are assembled in church, pigeons are suspended above, and wafers, cakes, oak leaves, and other things are made to shower down upon the altar—all this as a dramatic representation of the miracle.

11. *Whit-Monday.*—A festival of the Church of England, as is also

12. *Whit-Tuesday.*—These three days together are called Whitsuntide. It forms a term, for which the 15th of May is fixed. The Wednesday, Friday, and Saturday of this week are Ember Days, and the week is consequently an Ember Week. (*See 8th February.*) This also was a period of festivity among our ancestors. They now had what they called the *Whitsun Ale*, which consisted in a meeting of householders with their families at the church, after service, to partake of a feast provided by the churchwardens, at which the young danced and played at games, while the seniors looked on. In the days before the poor were supported by rates, a collection was made on this occasion, usually found sufficient to provide for them. The Whitsun Ale is now degenerated, where it exists at all, into a merry-making at a barn. Whitsunday and Martinmas terms (May 15 and November 11) are those alone regarded for the leasing of all kinds of property, paying of rents, and engaging of servants, in Scotland.

17. *Trinity Sunday*, a festival of the Church of England, which always takes place eight weeks after Easter.

21. *Corpus Christi*, a festival of the Romish Church, always held on the Thursday after Trinity Sunday. It celebrates the doctrine of transubstantiation. In all Roman Catholic countries it is observed with music, lights, flowers strewed in the street, rich tapestries hung upon the walls, and processions and plays representing Scripture subjects.

29. *Restoration Day*, a holiday of the Church of England to celebrate the restoration of monarchy in the person of Charles II., May 29, 1660, after its suppression for the preceding twelve years. The populace at one time wore oak leaves in their hats on this day, with reference to the concealment of Charles in the Royal Oak, while skulking after the battle of Worcester 1651.

Natural History.—May is a month of the best reputation—indeed a general favourite in imagination; but it often balks the hopes of its worshippers. In favourable seasons, it presents many beautiful appearances, as herbage and foliage of the brightest green, a profusion of natural flowers, soft and genial skies, fishes leaping, swallows twittering, bees humming, the cuckoo repeating her note, and the corn coming into blade. But these appearances are often prevented or much clouded by cold east winds, most destructive to the fruit blossom. The greater prevalence of this wind during May than in any other month, seems to be chiefly the cause of the well-known injunction, 'Change not a clout till May be out.' The general average temperature is about 51 degrees. We are now arrived at the latest period of seed-time. In the most backward parts of the country, barley is still sown; turnip sowing is general; and the seeds of some of the tenderer garden plants are committed to the earth. The ash, the last-budding of our native trees, comes into leaf in the latter part of the month.

JUNE.

The probable origin of the name of this has been explained at the same time with that of May.

11. *St Barnabas the Apostle*, a holiday of the Church of England. In the old style, the 11th of June was the longest day; hence an ancient rhyme—

> Barnaby Bright,
> The longest day and the shortest night.

15. *St Vitus's Day.*—St Vitus was a Sicilian martyr. From him, though for what reason is unknown, is named a well-known nervous affection of the limbs, proceeding from a disordered state of the visceral system. It was a popular belief that rain on this day indicated rain for thirty days thereafter.

24. *St John's Day*, the Nativity of St John the Baptist, a holiday of the Church of England. The *Eve of St John*, variously called *Midsummer Eve*, was formerly a time of high observance amongst the English, as it still is in Catholic countries. Bonfires were everywhere lighted, round which the people danced with joyful demonstrations, occasionally leaping through the flame. A certain number of citizens formed a watch, which perambulated the streets all night. It was also believed that on this eve, by fasting, waking, pulling certain herbs, and going through certain ceremonies, it was possible to obtain an insight into futurity on some important points. *Fasting St John's Fast* was a great feat of young women a century or two ago. There was also a custom of holding vigil in the church-porch, precisely the same as described under St Mark's Day (April 25).

29. *St Peter's Day*, a high festival of the Romish Church, and a holiday of the Church of England. It is celebrated at Rome with illuminations and magnificent ceremonials. In England, till a recent period, the bonfires and watchings of St John's Eve were also customary on the eve of this festival.

Natural History.—In the central parts of our island, this is in general a dry coldish summer month. The days, however, are at the longest; and though June ranks only third highest as to temperature, drought or evaporation reaches the extreme point. June here resembles the May of more southern climes. The foliage being now quite fresh and fully expanded, and the verdure of the pastures and corn-fields being also at the best, the face of nature appears to the greatest advantage. Towards the end of the month we meet with a near coincidence of four stages of vegetation—the earing of wheat, the flowering of the rose, the ripening of strawberries, and the commencement of hay harvest. The general average of the thermometer is 57 degrees. In the course of the month we have the flowering of a great number of fine perennials and shrubs, so that the gardens are usually in great glory. It is also the time when weeds give the gardener and husbandman the greatest trouble.

JULY.

This, being at first the fifth month of the Roman year, was called Quintilis. It became the seventh in consequence of the reform of the calendar by Julius Cæsar, in whose honour, as he was born in it, Augustus gave it the present name.

3. The day fixed in the calendars as the first of the *Dog-Days*, the last being the 11th of August. The dog-days precede and follow the heliacal rising of the star Sirius (in the constellation of the Greater Dog) in the morning, which in Pliny's time was on the 18th of July. The extreme heat of this season of the year, although to us palpably the effect of the continued high position of the sun, was connected by the ancients with the appearance of this star in the morning. They considered the dog-star as raging, and gave the time the appellation of the Dog-Days. The liability of dogs to rabies in consequence of the heat of the season was connected with the same star, though there was nothing but accident in the collusion; and they butchered these animals without mercy. At Argos, there was a festival expressly instituted *for the killing of dogs* during this season. By the precession of the equinoxes, the heliacal rising of Sirius in the morning has been changed to the latter end of August, and in a few thousand years more it will take place in the depth of winter.

4. *The Translation of St Martin Bullion*, noticed as a festival in the Church of England calendar, though not observed. There is an old saying, not heretofore in print, 'If the deer rise up dry and lie down dry on St Bullion's Day, it is a sign there will be a good gose har'st;' meaning, apparently, that dry weather at this season is favourable to the crops.

St Ulric's Day.—On this day, in ancient Catholic times, the people brought fish to the altar to obtain the favour of St Ulric, and one sat there selling the same back to the public for the benefit of the Church.

7. *The Translation of St Thomas à Becket*, noticed as a festival in the Church of England calendar.

15. *St Swithin's Day*—remarkable on account of a well-known popular notion, that if it rain on this day, there will be more or less rain for forty days to come. St Swithin lived just a thousand years ago. He was an eminently pious and learned bishop of Winchester, and priest to King Egbert. He was the deviser and originator of tithes in England. The story runs that, being buried by his own request in the churchyard of the cathedral, the priests a hundred years after felt desirous of giving him greater honour, and commenced the work of translating his remains into the interior. This was on the 15th of July. They were stopped in their work by a heavy fall of rain; neither could they resume their duty next day, for the heavy rain still continued. In short, this rain lasted forty days, by which time the priests became convinced that it was designed to stop them in a work which, though well meant on their part, was ill taken on that of the saint; and they gave up the point. Ever since then, it has been held as a maxim that if there be rain on St Swithin's Day (the 15th of July), there will be rain for the forty ensuing days. In a scientific work on the climate of London, it is acknowledged that 'in a majority of our summers, a showery period, which with some latitude as to time and local circumstances, may be admitted to constitute daily rain for forty days, does come on about the time indicated by this tradition—not that any long space before is often so dry as to mark distinctly its commencement.'

20. *St Margaret's Day.*—This day figures in the Church of England calendar. St Margaret was a holy Italian virgin, martyred in 278. She seems to have been the Christian Lucina: formerly, at Paris, there was a flocking to church on this day of all women who were pregnant, or thought they might be so in the course of the year.

25. *St James the Apostle*, a holiday of the Church of England. In Catholic times, it was customary for the priests on this day to bless the apples. On St James's Day, but according to old style (7th August, new style), oysters appeared in London, and there is a popular notion that he who eats oysters on that day will never want money for the rest of the year.

Natural History.—July is the warmest month of the year, the general average temperature being 61 degrees. With us it may be accounted the most important, as its temperature in a good measure regulates the ripening of the crop—that is to say, determines whether it shall be early or late; and in our climate this for the most part may be reckoned a criterion of its value. Flora is in her glory this month. The greatest display of flowers in the whole year takes place in the course of July in our climate. The list includes all the hardy annuals and a great many others. At the same time all our small fruit are in abundance, cherries and strawberries in the beginning being followed by currants, gooseberries, and raspberries, in all their varieties. In the early part of the month barley and oats come into ear, and sometimes in very forward seasons a little barley is cut before the end of July; but very rarely any other kind of grain is ready for the sickle before the middle of August. A great part of the produce of the garden comes to perfection, such as early cabbage, cauliflower, turnips, peas, beans, lettuce, &c. Early potatoes also make their appearance, but are not mature till next month.

AUGUST.

In early Roman times this month was called Sextilis, as being the sixth of the year. The Julian arrangement made it the eighth. It acquired the name *Augustus* in honour of the second of the Cæsars, to whom it had been a fortunate period, he having in it assumed his first consulship, celebrated three triumphs, subdued Egypt, received the oath of allegiance of the legions that occupied the Janiculum, and terminated the civil wars of Rome. As already mentioned, being dissatisfied with its being a month of thirty days, Augustus took a day from February to make it one of the longer class, like that (July) of his uncle Julius. At the same time, September and November were each deprived of a day, which was added in the one case to October, and in the other to December.

1. *Lammas Day*, called also the *Gule of August*. It is now only remarkable as a day of term for some purposes. It was probably one of the great festival days of our heathen ancestors; and it is worthy of observation that it occurs exactly three months after another of these—Beltane. Cormac, bishop of Cashel in the tenth century, records that in his time four great fires were lighted up on the four great festivals of the Druids—namely, in February, May, August, and November: probably Beltane and Lammas were two of these. Lammas seems to have been held as a day of thanksgiving for the new fruits of the earth. It was observed with bread of new wheat; and there was a custom in some places at no distant period for tenants to be bound to bring in wheat of the new crop to their lord on or before this day. The most rational explanation of the word is that which derives it from the Saxon *Hlaf-masse* (loaf-mass, or the loaf-festival), the *f* being in time softened away on account of the difficulty of pronouncing it before *m*. Till the middle of the last century, the shepherds in various parts of Scotland were accustomed to hold festive meetings on Lammas Day on the tops of conspicuous hills, turf towers and benches having been previously constructed for the purpose. The Gule of August is probably from the Celtic *Cul* or *Gul* (a festive anniversary). The early Christian priesthood, finding this word in vogue, Latinised it into Gula, which means throat. This, taken in connection with its being the day of the festival of St Peter ad Vincula (instituted in honour of a relic of St Peter's chains), seems to have suggested to them to make up a story of a daughter of the tribune Quirinus having been cured of a disorder in the throat by kissing the said relic on the day of its festival. And the Celtic *gul* (an anniversary) has thus been the remote cause of a Christian festival being instituted to *Gula* (the throat), and held on the day of St Peter's Chains.

15. *The Assumption of the Blessed Virgin*, a grand festival of the Romish Church, and a day noted in the calendar of the Church of England. It was instituted in 813, to celebrate the ascension of the Virgin into heaven. In Catholic countries, this day is marked by splendid ceremonies and processions.

24. *St Bartholomew's Day*, a holiday of the Church of England. Bartholomew was an apostle, but there is no Scriptural account of his labours or death. The legend of the Romish Church represents him as preaching in the Indies, and concluding his life by being flayed alive by order of a brother of the king of Armenia. In memory of his death, it was customary at our monastic institutions, in the middle ages, to distribute small knives amongst the people. The day has a horrible celebrity in connection with the massacre of the Protestants at Paris in 1572.

Natural History.—The mean average heat of this month (60 degrees) approaches so near that of July, that a warm dry August often compensates for a low temperature in the preceding month. In the beginning of August we have often the heaviest rain of the whole year, termed in Scotland the Lammas Flood. July and August, always our warmest, are often our wettest months. Southerly and westerly winds have now the ascendancy, but in the case of very heavy rain the wind usually falls. Harvest, in the average, commences about the middle of this month, but in late seasons not till the very end. The order of ripening of our cereal grains is—barley, wheat, oats. The earliest of our larger fruit begin to ripen this month—apples and pears, but hardly plums. The later and more tender

exotic annuals now come into flower, such as the amaranths, xeranthemum, zinnia, jacobea, China asters, &c.; also the gigantic biennial shepherd's club, which sows itself, and the also gigantic annual sunflower. St John's wort, monkshood, flox, and others, also flower about this time. This month is likewise the busiest season of the herring fishery, an important branch of industry, which affords lucrative employment to vast numbers of the working population.

SEPTEMBER.

This was the seventh (*septem*) month in the Roman year before the Julian reform of the calendar. The two first syllables of the name are thus readily accounted for; the last, which also figures at the end of the names of the three following months, is an ancient particle of doubtful signification.

1. *St Giles's Day.*—This saint's day figures in the Church of England calendar. A native of Greece, he travelled into France in 715, and became abbot of Nismes. He literally obeyed the Scriptural injunction by selling his patrimony for the benefit of the poor, and on one occasion gave his coat to a sick mendicant, who was cured miraculously by putting it on. St Giles has thus become the patron saint of beggars and cripples. St Giles's Church, Cripplegate, London, and the High Church in Edinburgh, are dedicated to him; and he is the patron saint of the Scottish capital, as far as it can be said to have one.

3. *The Nativity of the Blessed Virgin*, a grand festival of the Romish Church, and still retained in the Church of England calendar. This festival has been held in honour of the Virgin, with matins, masses, homilies, collects, processions, and other ceremonies, for upwards of a thousand years. According to the Catholic writers, a religious contemplative, every year upon the 8th of September, heard most sweet music in heaven, with great rejoicings of angels. Once he asked one of them the cause, and was told that upon that day was celebrated in heaven the nativity of the mother of God. The birthday of the Virgin being thus miraculously communicated to mankind, Pope Servius instituted a festival to hold it in honour.

14. *Holy Rood Day*, or the day of the Exaltation of the Holy Cross, a festival of the Romish Church, still retained in the Church of England calendar. It celebrates the miraculous appearance of a cross in the heavens to the emperor Constantine. The Wednesday, Friday, and Saturday after Holyrood Day, are Ember Days, and the week in which they occur is consequently termed Ember Week.

21. *St Matthew the Apostle*, a festival of the Church of England.

29. *The Festival of St Michael and all the Holy Angels*; shortly, *Michaelmas Day*, a grand festival of the Romish and English Churches. St Michael is singled out for particular mention as being the chief of angels, or archangel. The theological character of Michael is obscure. Suffice it here to quote the remark of Wheatley, in his exposition of the book of Common Prayer, that 'the feast of St Michael and all Angels is observed, that the people may know what benefits are derived from the ministry of angels.'

Michaelmas, besides being one of the quarter-days in England for the payment of rents and wages, has been distinguished from an early period in that and other countries as the time for the annual election of corporation officers, magistrates, and other civil guardians of the peace. It has been suggested that the selection of the day for this purpose might arise from 'the old opinion of tutelar spirits, who have, or are thought to have, the particular charge of certain bodies of men, or districts of country, as also that every man has his guardian angel, who attends him from the cradle to the grave, from the moment of his coming in to the moment of his going out of life.'

It is an ancient and extensively-prevalent custom to have a goose for dinner on Michaelmas Day. Queen Elizabeth is said to have been eating her Michaelmas goose when she received intelligence of the defeat of the Spanish Armada. Very curious and recondite origins have been assigned to this custom, but it seems to have arisen simply from the goose being in finest condition for the table immediately after it has had the range of the reaped harvest fields.

Natural History.—This is often the finest month of the year; yet, as with other portions of our seasons, it is not to be depended on. In temperature (the general average is 55 degrees) it ranks between May and June, yet the first three weeks are often as warm as any part of the summer; but there is usually a sensible falling off in the latter part. In Scotland, the bulk of the harvest work of the season is usually effected during this month. It is likewise the time when large fruit comes to perfection. The flower borders have still a gay appearance, the latest exotic annuals only beginning to flower at this time. The dahlia, a magnificent flower of recent introduction, appears in all its grandeur during September. It has been remarked that at no other period of the year is the house-fly so numerous.

OCTOBER.

As already explained, October has its name from having been the eighth month of the Roman year before the Julian reform of the calendar. In the time of the emperor Domitian it was called Domitianus, in his honour; but after his death that name was abandoned by general consent, from a wish to sink the memory of so execrable a tyrant. The Saxons called October *Wynat-monat* (wine month), from its being the time when wines were annually brought into Germany (none being then made in that country).

2. The festival of the *Holy Angel Guardians* in the Romish Church.

9. The day of *St Dennis*, the patron saint of France. St Dennis was put to death, with some companions, in the year 272, upon an eminence near Paris, since called from that circumstance Montmartre (*Mons Martyrum*). According to the legend, his head had no sooner been cut off, than the body rose, and taking up the head, walked with it two miles. Portraits of the martyred saint, carrying his head in his hand, abound in old prayer-books.

18. The day of *St Luke the Evangelist*, a festival of the Church of England. This day was appointed to be St Luke's festival in the twelfth century.

St Luke was usually represented in the act of writing, with an ox by his side, having wings and large horns. The natural habit of this animal in ruminating upon its food, caused it to be selected as an emblem of meditation appropriate to this evangelist. At Charlton, a village near Blackheath, about eight miles from London, a fair is held on St Luke's Day, and at this fair there was kept up till a very recent period a curious custom, originating evidently in the emblem of St Luke. People came to this fair masked; the men generally wore women's clothes; and many bore horns upon their heads. It was a scene of wild riot and confusion. The booths had horns of various animals, gilt and otherwise, for sale, and even the gingerbread was marked with that figure. 'Horns! horns!' was the universal cry. The gentry used to come in multitudes to see the sports of this occasion. Some fragments of a stained-glass representation of St Luke and his horned companion still exist, we believe, in a window of the parish church.

25. *The festival of St Crispin and St Crispinian.*—The name of St Crispin is in the Church of England calendar. Crispin and Crispinian are said to have been two Roman youths of good birth, brothers, who, in the third century, went as Christian missionaries to France, and preached for some time at Soissons. In imitation of St Paul, they supported themselves by working at the trade of the shoemaker during the night, while they preached during the day. They were suc-

cessful in converting the people to Christianity, until arrested in their course by Rictius Varus, governor under the emperor Maximian Herculeus. Butler, in his 'Lives of the Saints,' says, 'They were victorious over this most inhuman judge by the patience and constancy with which they bore the most cruel torments, and finished their course by the sword about the year 287.' The two young martyrs were of course canonised, and a splendid church was built to their honour at Soissons, in the sixth century. The shoemaker craft throughout the whole Christian world have from an early period regarded Crispin and Crispinian as their patron saints, but particularly the first. They often celebrate the day set apart for these saints in the calendar with processions, in which Crispin, Crispinian, an Indian prince, and some other personages whom tradition has associated with their history, are represented in splendid antique dresses. Sometimes a coronation of Crispin is part of this ceremony, for there is a notion that he was a royal personage; and hence we find the shoemakers, in Scotland at least, assuming for their arms a leather knife surmounted by a crown, and styling themselves 'the royal craft.' Whether they celebrate the day by processions or not, they are sure to distinguish it by giving themselves up for the time to jollity. It is to be hoped, however, for the honour of 'the royal craft,' that there is no foundation for the scandalous censure conveyed against them in the following doggrel couplet:—

> 'On the twenty-fifth of October,
> There was never a souter sober!'

28. The day of *St Simon* and *St Jude*, a festival of the English Church. Simon, usually surnamed the Canaanite, remained with the other apostles till after Pentecost: it has been surmised that he visited Britain, and there suffered martyrdom. Jude, otherwise called Thaddeus, and thought to have been a son of Joseph by a former wife, is said to have suffered martyrdom in Persia.

On this day, formerly, it was considered proper to indue winter vestments. It was always expected to be rainy. A character in an old play called the *Roaring Girl*, says, 'As well as I know 'twill rain upon Simon and Jude's day.' In another production of the Elizabethan stage, some one exclaims, 'Now a continual Simon and Jude's rain beat all your feathers as flat down as pancakes.' Perhaps there is some connection between this notion and the emblem assigned to the day in old calendars—namely, a ship, which seems to have been adopted in consideration of Simon and Jude having been fishermen.

Natural History.—During this month, the average temperature of which is 49¼ degrees, there are usually decided symptoms of the approach of winter; yet the weather of the month is often of a steady and agreeable character. Bare harvest fields, some of which are in the course of being ploughed for winter wheat, form a conspicuous feature of external nature. The foliage of the trees becomes changed from green into a variety of tints, which gives the woods a beautiful appearance, and is generally admired, although felt to betoken that they are soon to be stripped of their summer honours. The migratory birds assemble, and commence their annual flight to more genial climes—the swallow to the coasts of Africa, the nightingale to the southern shores of the Mediterranean, and the puffin and some others either to Africa or to Spain. Towards the end of the month, if high winds prevail, the trees are a good deal bared. In the gardens less decline is to be remarked. The flower-borders still have a gay appearance; the hollyhock, dahlia, and some other flowers, being yet in good condition. This is the time of the laying up of potatoes. In England, it was the favourite time for brewing, on account of the equable temperature; and *October* is a secondary name for the yeoman's brown beverage. In this month the gossamer has a striking appearance, floating like an aërial veil over the fields, and meshing the passing traveller.

NOVEMBER.

November obtained its name from being the ninth (*novem*) month of the Roman year, before the reform effected by Cæsar. Our Saxon ancestors called it *winter-monat* (wind month).

1. *All Saints' Day*, a festival of the Romish and English Churches—otherwise called *All Hallow Day*. The evening of the 31st October is called All Hallow Even, or Hallow E'en, as being the vigil or eve of All Hallow Day. Hallow-tide is a comprehensive name for both days. The Romish Church designed this day to be held in honour of all those saints who had not particular days appointed for them.

It does not appear that All Saints' day, or its Eve, was ever marked by very particular observance in the Catholic Church. Nevertheless, there is scarcely any time more distinguished by the common people throughout the British Islands than All Hallow Eve or Hallowe'en. This is probably owing to the fact of November 1st having been one of the four great festivals of our Pagan ancestors. The 1st of February, the 1st of May, and the 1st of August, were the other three; the ancient names of the two latter are still in vogue—Beltane and Lammas. These four days were celebrated by the kindling of fires in conspicuous places, and performing certain ceremonies. The fires of Beltane and Lammas have already been spoken of; it is probable that those of the February festival are kept up in the *Candlemas blaze*, with a slight change of day. Fires were kindled in Wales, Ireland, the Scottish Highlands, and even in England, on the 1st of November, till a very recent period; and the custom may still be kept up in some remote places.

Pennant states as follows:—'In North Wales there is a custom upon All Saints' Eve of making a great fire called *Coel Coeth*. Every family, about an hour in the night, makes a great bonfire in the most conspicuous place near the house, and when it is almost extinguished, every one throws a white stone into the ashes, having first marked it; then having said their prayers turning round the fire, they go to bed. In the morning, as soon as they are up, they come to search out the stones, and if any of them are found wanting, they have a notion that the person who threw it in will die before he sees another All Hallow Eve.' The Welsh also practise many of those rites for divining the future which are so prevalent on Hallowe'en in other parts of the United Kingdom. It is mentioned by another writer that they dance round and jump through the bonfires, and at the conclusion always run away, 'to escape the black short-tailed sow.' Vallancey states that the Irish have now generally substituted a candle illumination for the fire of the 1st of November.

The Rev. Mr Shaw, in his 'History of Moray,' written in the latter part of the last century, speaks of the Hallow Eve fire being still kindled in Buchan. In the 'Statistical Account of Scotland,' published at the close of the century, the same fire is spoken of as kept up in various parts of the Highlands. In the parish of Callendar, for instance, 'On All Saints' Eve, they set up bonfires in every village. When the bonfire is consumed, the ashes are carefully collected in the form of a circle. There is a stone put in, near the circumference, for every person of the several families interested in the bonfire; and whatever stone is moved out of its place, or injured, before the next morning, the person represented by that stone is devoted, or *fey*, and is supposed not to live twelve months from that day.' How strange thus to find a superstitious custom of this nature existing in a form so nearly identical in Wales and Perthshire.

Several writers in the Gentleman's Magazine, in the latter part of the last century, speak of Hallow Eve fires being still kindled in various parts of England, chiefly by persons of the Catholic persuasion. The practice seems to have been to carry about a quantity of burning stuff, under the name of *tinley* or *tindle*.

These ceremonies appear to be amongst the earliest connected with the 1st of November. They are, or have recently been, everywhere prevalent throughout these islands. As they are obviously of a Pagan character, we conclude that the notability of this season is of older date than the introduction of Christianity, and that its character as All Saints' Day has comparatively little affected the popular mind.

We have notices from both Perthshire and Ireland of the 1st of November being partly regarded as the proper time for returning thanks for the realised fruits of the earth. The Irish, in this regard, called it *La Mas Ubhal*—that is, the day of the apple fruit—and celebrated it with a drink or mess composed of bruised roasted apples amongst ale or milk. This drink in time acquired the strange appellation of *lamb's wool*, a stupid corruption apparently of the name of the day in the Celtic language.

Ringing of bells was one of the modes of celebrating Hallowmas in England in the days of our ancestors. It was a Roman Catholic practice, being designed in some way to favour the souls of departed Christians. For this reason Queen Elizabeth prohibited it.

It was also a custom of our Catholic forefathers to have a cake baken on this eve for every member of the family, as a *soul mass cake* or *soul cake*. It was composed of oatmeal, and seeded; and pasties and furmety were incidental to the same evening. In families of good condition, a quantity were baken and set up on a board, like the shew-bread in old pictures in the Bible, to be given to visitors, or distributed amongst the poor. There was a rhyme for the occasion—'A soul cake! a soul cake! Have mercy on all Christian souls for a soul cake!' People went from parish to parish *a-souling*, as they called it—that is, begging in a kind of chant for soul-cakes, or anything to make them merry on this eve. It is very curious to find that a century and a half ago the inhabitants of St Kilda, so far removed from all other parts of Britain, had a custom of baking a large triangular cake, furrowed on the edges, on All Saints' Night.

Essentially connected with all these customs are those better known ones which Burns has so well and so faithfully described in his poem of *Hallowe'en*. All over the British islands, the festive and fortune-telling practices of this evening are very nearly the same. As some proof of this, passages from an English, Irish, and Scottish poet may be presented side by side:—

Two hazel-nuts I threw into the flame,
And to each nut I gave a sweetheart's name:
This with the loudest bounce me sore amazed,
That in a flame of brightest colour blazed;
As blazed the nut, so may thy passion grow,
For 'twas thy nut that did so brightly glow!
—*The Spell, by Gay.*

These glowing nuts are emblems true
Of what in human life we view;
The ill-matched couple fret and fume,
And thus in strife themselves consume;
Or from each other wildly start,
And with a noise for ever part.
But see the happy, happy pair,
Of genuine love and truth sincere:
With mutual fondness, while they burn,
Still to each other kindly turn;
And as the vital sparks decay,
Together gently sink away:
Till life's fierce ordeal being past,
Their mingled ashes rest at last.
—*Nuts-Burning, All Hallowe'e, by Charles Graydon.*

Jean slips in twa wi' tentie ee,
Wha 'twas she wadna tell;
But this is Jock and this is me,
She says in to hersel':
He blessed owre her, and she owre him,
As they wad ne'er mair part,
Till fuff! he started up the lum,
And Jean had e'en a sair heart
To see't that night.
—*Hallowe'en, by Burns.*

Nuts, besides being thus used for divination, are cracked and eaten; and hence, in the north of England, All Hallow Eve is often called *Nut-crack Night*. Apples are also extensively eaten, this consumpt of fruit having probably some reference to the heathen character of the day, as that of thanksgiving for the produce of the season. The fortune-telling customs described by Burns, besides the above, are—for the girls to pull stalks from a corn-stack, and ascertain, from the presence or absence of the top pickle, an interesting point in their moral history—for a solitary female to go to a kiln, and throwing a blue clue into the pot to wind it, expecting that ere finished it will be held back, when, by inquiring who holds, a response will be obtained disclosing the name of the future husband—to eat an apple at a looking-glass, expecting to see a vision of the future husband peeping over the shoulder—to sow hemp-seed in the yard, saying, 'Hemp-seed, I saw thee, hemp-seed, I saw thee, and her that is to be my true love come after me and draw thee,' expecting that, on looking over the shoulder, a vision will be obtained of the future spouse in the act of pulling grown hemp—to win three wechts o' naething in the barn, expecting to see a like vision—to fathom a barley-stack thrice, expecting at the last to embrace your mistress—to dip a shirt sleeve in a rivulet at the meeting point of the lands of three proprietors, and then hang it by the fire to dry, trusting to see such a visionary person come in and turn the other side—to pull stalks of deceased cabbages blindfolded, without choice, and augur, from their straightness or crookedness, the figure of the future spouse, from the earth which clings to the root the fortune she will bring, and from the taste of the heart her temper—finally, to set three dishes on the floor, one empty, one with clean, and one with foul water, and cause the company to approach them blindfolded and dip in a hand; when he who dips in the empty one is expected to remain unmarried, he who dips in the foul one to marry to a widow, and he who dips in the clean one to marry a female not hitherto married. The whole of these rites are as familiar to the Welsh, Irish, and Northumbrian, as to the Ayrshire peasantry. Many of them are also practised in England on St John's Eve, the 23d of June.

Hallowe'en is still observed, but the more daring rites are generally given up. Meetings of young persons take place, and a plentiful store of nuts and apples being provided, a few simple amusements are practised. The experiment of the burning nuts, to test the durability of love or friendship, is still a favourite. Ducking for apples is another. A tub being provided, nearly full of water, and the fruit thrown in, the young people endeavour to seize an apple with their teeth—a task of much more difficulty than might be supposed, and which generally puts the dress and tresses of fair experimentalists into considerable disorder. The baffled efforts of the various parties raise of course shouts of laughter. Or a cross stick is suspended by a string from the ceiling, with a short burning candle on one end and an apple on the other. While it swings rapidly round, lads and lasses, with their hands tied, endeavour to catch the apple with their teeth, but generally suffer a good deal from the candle before they succeed in their object. Here, also, failure is a source of infinite amusement. It is rather remarkable that Burns has not introduced into his poem any notice of these sports, which, like the others, are prevalent over the whole of her Majesty's home dominions. It may not be out of place here to remark, that the jest of the apple and candle is nearly the same as that of the quintain, a favourite sport of our ancestors, commonly practised in summer. The quintain was a heroic figure of wood, on a vertical pivot, used as a butt for the practice of tilting. In this case it had a cross board, one end of which was broad, while the other was furnished with a heavy bag of sand. The trick was, to come tilt against the broad end, and escape receiving a knock-down blow from the sand-bag.

2. *All Souls' Day*, or the *Commemoration of the Faith-*

ful Departed.—A very solemn festival of the Romish Church, which has masses and ceremonies appropriate to the occasion, designed in favour of the souls of all the dead. 'Odillon, abbot of Cluny, in the ninth century, first enjoined the ceremony of praying for the dead on this day in his own monastery; and the like practice was partially adopted by other religious houses until the year 998, when it was established as a general festival throughout the western churches. To mark the pre-eminent importance of this festival, if it happened on a Sunday, it was not postponed to the Monday, as was the case with other such solemnities, but kept on the Saturday, *in order that the church might the sooner aid the suffering souls;* and that the dead might have every benefit from the pious exertions of the living, the remembrance of this ordinance was kept up by persons dressed in black, who went round the different towns, ringing a loud and dismal-toned bell at the corner of each street, every Sunday evening during the month, and calling upon the inhabitants to remember the deceased suffering the expiatory flames of Purgatory, and to join in prayers for the repose of their souls.'—*Brady's Clavis Calendaria.*

5. The anniversary of the discovery of the Gunpowder Plot in 1605, and of the landing of King William III. in 1688; observed in the British dominions as a holiday, and celebrated by the Church of England by a form of prayer with thanksgiving. There is also a popular celebration of this day. From an early hour, the boys go about collecting materials for a bonfire, or money wherewith to purchase them. In some, perhaps most places, they carried with them a frightful figure composed of an old suit of clothes stuffed with straw, to represent Guy Fawkes. They called on the passengers and householders to 'remember Guy,' or shouted some balderdash rhymes. In the evening the bonfire is lighted, with Guy Fawkes in the middle of it, amidst tumultuous merriment. The firing of guns as a token of rejoicing, we are glad to say, is now discontinued on this day, and we trust the other absurd usages will soon likewise disappear.

11. *St Martin's Day*, or *Martinmas*, in the Church of England calendar. Popularly, this is one of the most remarkable days of the year, especially in Scotland, where Whitsunday and *Martinmas* are the two great terms for leases and engagement of servants, the latter being that at which the occupation of farms usually commences. Formerly, it was a quarterly term day in England: a payment of corn at Martinmas occurs in the Doomsday Survey. On the continent, from an early age, the day has been distinguished convivially; and this apparently for two reasons—namely, that now the people first tasted the wines of the season, and killed the animals required to be salted for their winter provisions. The entrails of these animals, prepared as sausages, or blood-puddings, became the subject of an immediate feast, while the rest of the meat was salted and set aside. In some countries, also, the goose, which is elsewhere enjoyed at Michaelmas, was now presented. The killing of beeves at Martinmas for winter provision was formerly universal in northern Europe, in consequence of there being no means of keeping them alive in winter; since the improvement of husbandry in some countries, the custom has been given up, and fresh meat used all the year round. The feasting upon the entrails was equally universal. So much was all this associated with Martinmas, that in Scotland a beeve killed at that time was called a *mart*, or *mairt*. In the old book of laws attributed (erroneously) to David I. of Scotland, it is provided that 'the fleshours sall serve the burgessis all the time of the slauchter of *Mairts*.' In Northumberland, also, a Martinmas bullock is called a *mart*. Tusser, in his curious metrical treatise on husbandry, written in the time of Henry VIII., says—

> When Easter comes, who knows not than
> That veal and bacon is the man?
> And *Martinmas beef* doth bear good tack,
> When country folks do dainties lack.

Bishop Hall, in his 'Satires,' written in the time of James I., mentions

> —— Dried flitches of some smoked beeve,
> Hang'd on a writhen wythe since *Martin's eve*.

It appears that the contents of the puddings made in England, were composed of blood, suet, and groats; and there was an enigmatical proverb thence arising, that 'blood without groats was nothing,' meaning that birth without fortune was of little value. Down to near the end of the last century there was not a family above the poorest condition in the rural districts of Scotland which had not a *mart*, or a share in one, and salted meat was the only food of the kind used in winter; now, there is no such practice known.

Martin, in whose honour this festival was at first instituted, is said to have been born in Lower Hungary about 316, and to have originally been a soldier. After a number of miraculous adventures, he settled as a hermit in the hollow of a rock near Tours in the south of France, where he was greatly venerated. He died bishop of Tours in 397. When a few fine days occurred about this time of the year, they were called *St Martin's summer.*

23. *St Clement's Day*, in the Church of England calendar. Clement is spoken of by St Paul as one of his fellow-labourers. Monkish imagination has supplied him with a history and a martyrdom. He is said to have been thrown into the sea with an anchor fixed about his neck. An anchor is therefore assigned to him as an emblem: of this the metropolis presents a conspicuous memorial in the anchor which forms the vane of the church of St Clement Danes, in the Strand. St Clement is held as the patron saint of the blacksmiths. It was formerly customary for boys, and the lower class of people generally, to go about on this day begging for liquor, wherewith they made a regale at night. Hence, in a certain class of old almanacs, the day was signified by the figure of a pot.

29. This is one of the days on which *Advent* may commence. Advent (literally the Coming) is a term applied from an early period of ecclesiastical history to the four weeks preceding Christmas, which were observed with penance and devotion, in reference to the approaching birth of Christ. There are four Sundays in Advent, the first of which is always the nearest Sunday to St Andrew's Day (November 30).

30. *St Andrew's Day.*—The festival day of this saint is retained in the Church of England calendar. St Andrew was one of the apostles. His history, as related by the Catholic writers, represent him as martyred in the year 66 at Patræ in Greece, upon a cross of the form of the letter X, which accordingly is still recognised as St Andrew's Cross. A supposed relic of this cross, carried to Brussels in the middle ages, caused its figure to be adopted as a badge for the knights of the Golden Fleece. Some relics of the apostle himself are said to have been carried by a Greek devotee named St Regulus, to Scotland, where they were placed in a church built at a place which subsequently became distinguished by the name of St Andrews. St Andrews became the seat of the Scottish primacy; and from this cause probably it was that St Andrew was in time considered as the patron saint of Scotland. In that country, however, there is scarcely any observance of this day in any manner; it is only when Scotsmen are abroad, and have occasion to select a day for an annual convivial meeting, that St Andrew's Day comes into notice. There used to be a procession of Scotsmen on this day in London, with singed sheeps' heads borne before them. It is remarkable that St Andrew is also a tutelar saint of the Russians, probably in consequence of the Greek locality of his martyrdom. There is an ancient and widely-prevalent custom connected with St Andrew's Day, to which Luther has adverted. Maidens, on the eve of this day, stripped themselves, and sought to learn what sort of husbands they were to have by praying in these terms—'Oh, St Andrew, cause that I obtain a good pious husband; to-night show me the figure of the man who will take me to wife.'

Natural History.—In this month the business of vegetation experiences its death. The trees are now thoroughly stripped of their foliage. It is reputed as a gloomy month; but the temperature is sometimes agreeable in the earlier part of it, and its average for the whole term is 43 degrees. A considerable number of plants remain in flower throughout November. The gloom of the month is said to have a depressing effect on the spirits of the English nation; let those who are liable to such influences lay to heart the following remarks of Johnson in the 'Idler:'—'The distinction of seasons is produced only by imagination acting upon luxury. To temperance every day is bright, and every hour is propitious to diligence. He that resolutely excites his faculties, or exerts his virtues, will soon make himself superior to the seasons, and may set at defiance the morning mist and the evening damp, the blasts of the east and the clouds of the south. Instead of looking for spring with anxious and caring mind, enjoy the present day; there are pleasures even in November.'

DECEMBER.

So called as being originally the *tenth* of the Roman year. Our Anglo-Saxon ancestors called December *winta monat*—that is, winter month; but after becoming acquainted with Christianity, this name was changed into *heligh monat*, or holy month, with reference to the celebration of the nativity on its twenty-fifth day.

6. *St Nicholas's Day.*—Retained in the Church of England calendar. St Nicholas was Archbishop of Myra, in Greece, A. D. 342. He is regarded as the patron saint of children and of mariners, probably in consequence of his benevolent zeal in the protection of orphans and stranded seamen. Churches built near the sea are in many instances dedicated to St Nicholas. He is also said to have shown much kind interest in the fate of young women, sometimes secretly throwing purses into the chamber-windows of those who lacked dowries. Hence has arisen a custom prevalent over a large part of the Christian world. On his eve, presents are hid in the shoes of those to whom any one wishes to give a pleasing surprise; and these, being found in the morning, are jocularly said to be gifts from St Nicholas.

St Nicholas is also considered as the tutelar saint of scholars, or clerks, and of robbers. The fraternity of parish-clerks have thought themselves entitled by their name to adopt him as their patron. How robbers should have come to be called St Nicholas's clerks, or St Nicholas's knights, it is not easy to see, unless it were from the coincidence of his name with one of the slang appellations of the devil.

Throughout the middle ages, there was a universal custom of electing a kind of mock bishop on St Nicholas's Day. A boy, possibly taken from amongst the choristers, was chosen by his associates as bishop, arrayed in suitable vestments, and indued with appropriate powers, which he enjoyed for some days. The infant prelate was led along in a gay procession, blessing the grinning multitude as he went, and he was even allowed to sing mass and to mount the pulpit and preach. Edward I., in his way to Scotland in 1299, heard vespers by a boy bishop at the chapel of Heton, near Newcastle. The boy bishop at Salisbury is said to have had the power of disposing of any prebends that fell vacant during his term of office; and one who died at that time had a monument in the cathedral, representing him in his episcopal robes. Mr Warton is of opinion that we see some faint traces of the rise of dramatic entertainments in the strange mummeries connected with the election of the Boy Bishop.

8. *The Conception of the Blessed Virgin* in the Romish and English calendars.

11. The fourteen days from this to Christmas Eve were called the *Halcyon Days*, and supposed to be, in their calm and tranquil character, an exception from the season. The term, which is now a regular adjective in our language, is derived from the bird, kingfisher or halcyon, which, from the days of Aristotle at least, has been the subject of a curious superstition. The ancients supposed that it built its nest on the ocean, and brought forth its young at the winter solstice. To account for the preservation of the nest and young amidst the severity of the season, they imagined that the bird had a power of lulling the raging of the waves during the period of incubation; and this power was believed to reside in its song.

13. *St Lucia's Day.*—Retained in the Church of England calendar. St Lucia was a young lady of Syracuse, who obtained a high character for a devout and charitable life, and died in the year 304. The last of the four series of Ember Days commences on the Wednesday following this festival.

16. *O Sapientia.*—This day is so marked in the church calendar, probably from an anthem sung on this day in the Romish Church beginning, 'O sapientia quæ ex ore altissimi prodidisti,' &c.

21. *St Thomas the Apostle*, a festival of the English Church. It was customary for women to go *a-gooding* on St Thomas's Day; that is, they went about begging money, and presenting in return sprigs of palm, and bunches of primroses, probably with a view to the decoration of their houses against Christmas.

25. *Christmas Day*, observed from an early period as the nativity of our Lord, and celebrated not only by the religious ceremonies from which the name of the day is partly taken, but by popular festivities of the most joyful kind. In England, Christmas is held by the church as a solemn festival, and distinguished by the complete cessation of business—an honour paid to no other day besides Good Friday. But within the last hundred years, the festivities once appropriate to the day have much fallen off. These at one time lasted with more or less brilliancy till Candlemas, and with great spirit till Twelfth Day; but now a meeting in the evening, little different from a common dinner party, though sure to be marked by a roast and plum-pudding, and pretty generally followed by a game at cards, is all that distinguishes Christmas in most families.

In former times the celebration of Christmas began in the latter part of the previous day—Christmas Eve. The house was first decked with holly, ivy, and other evergreens. Candles of an uncommon size were then lighted, under the name of Christmas Candles; an enormous log, called the Yule Clog, or Christmas Block, was laid upon the fire: the people sat round, regaling themselves with beer. In the course of the night, small parties of songsters went about from house to house, or through the streets, singing what were called Christmas Carols—simple popular ditties, full of joyful allusions to the great gift from God to man in the Redeemer. A mass was commenced in the churches at midnight, a custom still kept up in the Catholic Church. At one period, the people had a custom of wassailing the fruit-trees on this evening; that is, they took a wassail bowl, threw a toast from it to the tree, and sung a song, expecting thus to secure a good crop next season. It was thought that, during the night, all water was for a short time changed into wine, and that bread baked on this eve would never become mouldy. These notions are essentially foolish; but as they are all well-meant adorations of the simple spirit of the people, they should not be hastily condemned.

The carols were more generally sung in the morning of Christmas Day. A contributor to the 'Gentleman's Magazine,' in 1811, describing the manner in which Christmas is celebrated in the North Riding of Yorkshire, says—'About six o'clock on Christmas Day I was awakened by a sweet singing under my window; surprised at a visit so early and unexpected, I arose, and looking out of the window, I beheld six young women and four men welcoming with sweet music the blessed morn.' It may scarcely be imagined how delightfully at such a moment would fall upon the half-slumbering ear such strains as the following:—

God rest you, merry gentlemen,
Let nothing you dismay,

For Jesus Christ our Saviour
Was born upon this day,
To save us all from Satan's power,
When we were gone astray.

Oh tidings of comfort and joy,
For Jesus Christ our Saviour
Was born on Christmas Day.

In Bethlehem in Jewry
This blessed babe was born,
And laid upon a manger,
Upon this blessed morn;
The which his mother Mary
Nothing did take in scorn.
Oh tidings, &c.

Christmas carols are amongst the oldest of English songs. A collection of them was printed by Wynkyn de Worde in 1521. They are still printed on single sheets, which are sold by chapmen or dealers in cheap literature. There is also more than one modern collection of these curious productions of modern ages.

The religious service of Christmas Day receives but a small share of attention from old writers. In fact, the day was chiefly distinguished by the popular festivities. Its grand feature was a feast, of great abundance, and at which a few particular dishes regularly appeared, above all, plum-porridge and mince-pie. In every great hall, whether of a man of rank or of a great corporation, there was a boar's head ushered in by minstrelsy. It was customary for the rich and noble to treat their humble dependents, and to meet with them on terms of equality, as considering that all men are regarded alike by the religion of him whose natal day they are celebrating. A sort of license prevailed. A branch of the mistletoe being hung up in the hall, or over the doorway, the youths were understood to have a right to kiss any maiden whom they could inveigle under it. At York, the freedom of the time was so extreme, that there were regular proclamations allowing women of evil repute and gamblers to come to the city and walk about openly for a certain number of days. It was also customary to elect a person as *Lord of Misrule*, who went about taking the lead in every kind of extravagant sport and merriment which the wit of man could devise. The election and functions of this personage were perhaps the most singular part of the festival. According to Stow, 'at the feast of Christmas, there was in the king's house, wherever he lodged, a Lord of Misrule, or Master of merry Disports, and the like had ye in the house of every Nobleman of honour or good worship, were he spiritual or temporal. The Mayor of London, and either of the Sheriffs, had their several Lords of Misrule, ever contending, without quarrel or offence, who should make the rarest pastime to delight the beholders. These lords, beginning their rule at Allhallond Eve, continued the same till the morrow after the Feast of the Purification, commonly called Candlemas Day: in which space there were fine and subtle disguisings, masks, and mummeries, with playing at Cards for Counters, Nayles, and Points in every House, more for pastimes than for gaine.'

The management of the plays usually acted at Christmas in the halls of colleges and law societies, fell to the care of the Lord of Misrule. The particular functionary elected in the inns of court in London, after exercising all the duties and going through the parade of royalty for a fortnight, at an expense of a couple of thousand pounds, was knighted at Whitehall by the real sovereign of the land.

In Scotland, before the Reformation, the religious houses had a similar officer for the Christmas revels, called the *Abbot of Unreason*, whose particular functions are graphically portrayed by Scott in his novel of 'The Abbot.' The custom was suppressed by statute in 1555.

26. *St Stephen's Day*, observed as a festival of the Church of England. There was formerly a widely-prevalent dogma that it was good to bleed horses about this time of the year, and St Stephen's Day was that chosen by most people for the purpose. On this day, also, blessings were implored upon pastures.

27. *St John the Evangelist's Day*, observed as a festival by the Church of England. Because John drank poison, without dying in consequence, it was supposed that those who put their trust in him were safe from all injury from that cause.

28. *Childermas*, or *Holy Innocent's Day*, observed by the Church of Rome with masses for the children killed by Herod. It was considered unlucky to marry, or to begin any work, on Childermas Day. The learned Gregory says, 'It hath been a custom, and yet is elsewhere, to whip up the children upon Innocent's Day morning, that the memory of Herod's murder might stick the closer, and in a moderate proportion to act over the "crueltie again in kinde."'

31. The last day of the year is called in Scotland *Hogmanay*, a word which has fruitlessly exercised the wits of the etymologists. The Scottish people, overlooking Christmas in obedience to the behests of their religious teachers, have transferred the merriment of the season to Hogmanay and New Year's Day, which they accordingly abandon to all kinds of festivity. Handsel Monday, or the first Monday of the year, is also an occasion of festivity. On Hogmanay, the children in small towns perambulate amongst the neighbours of the better class, crying at their doors, 'Hogmanay!' or sometimes the following rhyme:—

Hogmanay, trollolay,
Gie's of your white bread and none of your gray;

in obedience to which call, they are served each with an oaten cake. In the evening, there are merry makings, which are always prolonged to twelve o'clock, which has no sooner struck than all start up excitedly, and wish each other a happy new year. Small venturous parties take a kettle with hot ale posset, called 'a het pint,' and go to the houses of their friends, to wish them a happy new year. Whoever comes first, is called in that house 'the First Foot,' and it is deemed necessary on such occasions to offer the inmates both a piece of cake and a sip from the posset kettle, otherwise they would not be lucky throughout the year. This is called '*First-Footing*.' Next day, all people go about among all other people's houses; presents are given amongst relations; and dinner-parties close the evening. Formerly, the first Monday of the year was also much observed as a festive day, and time for giving presents, from which latter circumstance it was called *Handsel Monday*. The Handsel Monday, old style, is still, in some rural districts, the chief feast day of the season. On the evenings of Christmas, Hogmanay, New Year's Day, and Handsel Monday, parties of young men and boys went about disguised in old shirts and paper vizards, singing at the various houses for a small guerdon. These *guizarts*, as they were called, also acted a rustic kind of drama, in which the adventures of two rival knights, and the feats of a doctor, were conspicuous. Almost everywhere in Scotland the festive and frolicsome observances of the New Year tide have very much declined.

Natural History.—December is the darkest, but not the coldest month of the year: the general average temperature is 40 degrees. The deciduous trees are now completely stripped of their foliage, and the ground often shows a snowy covering, although it is rarely that there is much strong ice in December. Amidst the general desolation, the pines and other evergreens form an agreeable resting-place for the eye. The rose also continues to blow during this month. Formerly, the Glastonbury thorn was a great wonder in England, being supposed to blow regularly on Christmas Day. The monks of the abbey there represented it as the staff of Joseph of Arimathea, which, being inserted by him in the ground, had miraculously sprouted out into a living tree. But it is now ascertained to have been only a member of a certain species of thorn well known in the East for blowing in the depth of winter.

THE PRIVATE DUTIES OF LIFE.

THE temporal duties enjoined on rational beings may be thus classed:—1. Duties which one owes to himself.—2. Duties which arise from domestic relations.—3. Duties which arise in the communities of which each one is peculiarly a member.—4. Duties which arise from the political relations of society.—5. Duties which arise between individuals who are of different nations. We propose in the meantime to treat of those duties which a rational being may be said to owe to himself, or, as they are generally termed, PRIVATE DUTIES.

LIFE AS A WHOLE.

Life is a succession of parts—infancy, youth, manhood, maturity, decline, old age, and death. What man becomes depends in part on his genealogy: as his infancy is, so will be his youth; as his youth is, so will be his manhood; as his manhood is, so will be his maturity; as maturity is, so will be decline; as decline is, so will be old age. If youth be passed in idleness, ignorance, folly, and crime, how can one hold his way in the world, side by side with the intelligent, the worthy, and the virtuous? If manhood has been passed in low pursuits, in rooting in the heart evil propensities, in wasting natural vigour, what awaits one in old age but poverty, pity, and contempt? If infancy be devoted to the reasonable expansion of the physical and intellectual powers—if knowledge of duty be acquired, and be rightly used, will not manhood be worthy, maturity respectable, decline honoured, and old age venerable? Life, then, must be taken as one event, made up of many successive ones. On these unquestionable truths we found all that is worthy of notice in the following pages.

PURPOSES OF LIFE.

We believe that human life, rightly understood, and rightly used, is a beneficent gift; and that it can be so understood and used. It is irreconcilable to reason that man was sent into this world only to suffer and to mourn; it is from his own ignorance, folly, or error that he does so. He is capable of informing himself; the means of doing this are within his power. If he were truly informed, he would not have to weep over his follies and errors. It is not pretended that every one can escape at once from a benighted condition, and break into the region of reason and good sense. But it is most clear, from what is well known to have happened in the world, that each generation may improve upon its preceding one; and that each individual, in every successive period of time, may better know the true path, from perceiving how others have gone before him. There can be no miracle in this. It will, at best, be a slow progress: and the wisdom arrived at in one age must command the respect of succeeding ones, and receive from them the melioration which they can contribute. We understand nothing of what is called the perfectibility of human nature; but we understand this, that if human nature can be made to know wherein its greatest good consists, it may be presumed that this good will be sought after and obtained. Man was created on this principle, he acts on this principle, although he is seen so frequently to make the most deplorable and distressing mistakes. If it be not admitted that mankind will always strive to obtain whatsoever seems to them good, and strive to avoid whatsoever seems to them evil, their moral teaching and training is in vain. If this principle be admitted, the sole inquiry is—what then is good? and what is evil?

INFANCY.

Every human being comes into the world with physical and intellectual qualities, propensities, and aptitudes, which distinguish him as much from all other beings, as he differs from them in figure and appearance. As society is a consequence of the Creator's will, as the proper divisions of labour are a necessary consequence of society, it is not irrational to suppose that individuals are born with adaptation to labour in some departments, and not in others. In the early stages of life these qualities are sometimes developed, whether they happen to be understood or not. But almost immediately after gaining some hold on life, all human beings become subject to the incidents which tend to strengthen original qualities, or to obscure or stop their progress, and even to suppress them, and engraft on the original stock those which are entirely different. It would be unjust to make infancy responsible for the evils and errors which arise in this manner; but certainly those who have the guidance of infancy are responsible, and will be held to be so. Children have a right to complain, and society has a right to complain, if duties to children be neglected; and it is needless to remark that there is another and inevitable accountability of a far more serious character. We shall have occasion to remark on the very onerous and important duties of those who, according to the order of natural and necessary law, are intrusted with forming and giving effect to natural qualities. This matter, however, properly belongs to another place.

YOUTH.

We come now to a period when accountability begins, in all the relations which were placed in the division of duties. If it be asked at what age this is to be fixed, we answer, that the good sense of judicial law recognises that a child may be a witness in solemn judicial proceedings, when inquiries addressed to him are so answered as to make it certain that he understands the nature and the obligation of an oath. This may be at the age of ten or twelve years. But the perception of right and wrong, and the sense of duty, begin at an earlier age. There certainly are children of the age of eight years who have a very clear sense of moral propriety; and very many who, between that age and twelve, can discern and reason on right and wrong, and arrive at a very sound judgment. We shall presume that all into whose hands this sheet may fall will be fully capable of comprehending its purpose, and of judging of its fitness to be useful to them. We must assume, then, that we are speaking to those who are willing to be instructed in serious things, and that they will not reject instruction from any source, however unpretending it may be, if it come to them in a manner which they can reconcile with their own reason, and with their own duty to themselves. Young persons think that they can see for themselves, and that they need not to be told what others have seen. But let us reduce this to common sense. Suppose a person to be under the necessity of going from the place in which he has lived, and which is familiar to him, to a far distant place. Let it be supposed that the road he must travel is crossed by many roads, and that he is frequently to find himself at points where several roads are seen, either one of which, so far as he can discern, may be the right one. Will it be of use to him to have been told, before he departs, which of these many roads to take? Will it help him onward to his destination, when he is bewildered, and unable to decide for himself, to find some one who can assure him of the right course? Life is a journey. Every step we take in it brings us to something new, something unexpected, and perhaps entirely different from that which was looked for. Those who have gone through it before us have left us their instructions in what manner it is to be undertaken and accomplished. They tell us of their own troubles and

difficulties; they warn us how to avoid the like in our own journey. Which is wisest—to listen to them, and weigh the worth of their warning, or to push on heedlessly, and take the consequences?

HEALTH—FOOD.

We suppose that every child of the ages last spoken of can form some opinion of the value of health. Most of them have suffered more or less by that time. They are now old enough to consider the purposes for which life has been given to them. They then feel that the purpose is to be pleased and gratified; to want and to have; and that restraint is disagreeable. But let them remember that life is a whole; that though all of them will not, yet some of them will, attain to its longest duration, and that it is wholly uncertain to whom that lot will fall. Long life may depend, and often does depend, on what children do, or omit, at an early age. Among the first gratifications which are looked for at this period, is the indulgence of the appetite for food. Here comes in a rigid law of the Creator. It cannot be broken without consequent suffering, nor repeatedly broken without impairing, and perhaps destroying, the material frame which has been described as so fearfully and wonderfully made. To require of that delicate machinery, on which the action of life depends, that which it is not qualified to do, and which it cannot do—to force it to do that which is offensive to it—and to make this requisition habitually—is a sin against natural law. Its punishments are well known. The restless sleep, the heavy head, the many sensations of uneasiness, the positive pain, the disgusting remedies, are the punishments which follow. They are not all. Nature loses its charms, companions their interest, duties become irksome, the mind hates its labour, penalties are incurred, parents or teachers are regarded with displeasure. These are the fruits of momentary and improper gratification of the appetites. On the other hand, there is a law of nature that food shall be grateful. It is required to supply the daily waste—to continue life. If there were not a craving want, we should take food as a mere necessary duty. It is kindly made to be a pleasure, and, like every other pleasure, it is to be used, and not abused. Thus, by ignorant or wilful pursuit of pleasure, we violate a law which brings with its just punishment not only the loss of the like pleasure for a time to come, but also pain and suffering from indispensable remedies. When children are sick, they are subjects of tenderness and pity; but in most instances they rather deserve to be punished, for they have broken a law wilfully, since they have disregarded their own experience. As to kinds or *quality* of food, nature is not unreasonably nice about this: that which it more frequently complains of is *quantity*.

CLEANLINESS.

This is not a mere matter of decency. It is one of the positive commands arising from the constituted order of things. Be it remembered that everything that lives, vegetable or animal, is wasting while life continues; and that all which is sent forth through the millions of openings by the skin, has run its round, and is lifeless; and that more than half of all the food taken comes forth in this manner. (See PRESERVATION OF HEALTH, Vol. I.) If perspiration, sensible and insensible, be permitted to rest on the skin, and stop the way of that which is coming, nature is offended, and will show that she is so. Such neglect is one of the causes of disease. This fact was probably well known to Eastern nations, since it was part of their religious duty to cleanse the skin. These nations were ignorant of the modern comfort of wearing a garment next the skin which can be frequently changed. The absence of this comfort was one of the causes of those dreadful diseases of which we read, and which are now unknown among Christian nations. There are classes of labourers and mechanics whose health would be preserved, and their lives prolonged, if they knew how much depended on periodical cleansing. It may be said that there is a connection between cleanliness and moral feeling. Perhaps it may be going too far to say that those who habitually disregard cleanliness, and prefer to be dirty, have no moral perception; but it may be truly said that those who are morally sensitive are the more so from respecting this virtue. There is a close affinity between moral depravity and physical degradation. The vicious poor are always shockingly filthy: the depraved rich are visited by worse penalties: they may have clean garments; but what can wash away the impurities which vice has made part of themselves? It is not for one's self only that the virtue of cleanliness commends itself. Every one comes within the observation of others. However uncleanly one may be himself, he is not the less offended at the like neglect in those whom he observes. Now it is every one's duty to himself to recommend himself to others, so far as he innocently and reasonably can, and to obtain their respect. Clean and costly garments may fall very short of doing this if it be seen that they are a covering for the neglect of this important law. If there be a lovely object to the human eye, it is a clean, clear-faced, healthy, innocent, neatly-clad, happy child. There are few children who may not, if they will, be neatly dressed, for this does not depend on that of which the dress is made. There are fewer who may not have a clear skin, and healthy look, if they are properly fed, and sleep in pure air. There are none who may not have a clean skin; for we speak to those who are old enough to judge for themselves. And let it be added, for their inducement, that in obeying the command to be clean they are performing a moral duty; in neglecting it, they are inflicting an evil on themselves in two ways—first, in diminishing their own health and comfort; and secondly, in losing the esteem of others.

AIR.

Among the generally unknown causes of loss of health, is the respiration of impure air. The congregation of many persons in one apartment, especially when artificial light in great quantity is permitted, is a cause of more maladies than is commonly supposed. Three causes, in such case, combine to destroy the fitness of the air for respiration—the animal heat of the assembly, the lights, and the breathing of the same air again and again. There must be such assemblies. The remedy is proper ventilation. The smoke of lamps has frequently occasioned death. No lamp is properly trimmed if it emit anything more than a pure bright flame. It is a common practice to keep sleeping apartments shut up. If there be several persons in a small room which has been shut up for several hours, it would be shocking to know how often they must breathe again and again the same air, and how unfit it is to be breathed after it has once visited the lungs. Add to this the impurity of the air, which is continually in contact with the furniture prepared and constantly used for sleeping, in an unaired apartment. It is not mere nicety, or fastidious delicacy, which requires that the pure air should be admitted where the human lungs are in action, but it is a law as old as the creation of man, and cannot be disregarded. A skilful observer might select among many, from the appearance of the countenance, those who have just left an apartment in which they have been respiring for hours a spoiled atmosphere. No doubt that this cause, long continued, so affects the whole mass of blood as to bring on many diseases. If pure air be peculiarly necessary to any class of persons, it is so to children. We believe a more useful suggestion could not be made on the subject of health to the whole community, than to invite them to respect this law of nature—that there cannot be perfect health where the air is impure, and that this applies especially to apartments appropriated to sleep. Visiting friends are often put into sleeping apartments which have not been opened for days and weeks; this is far enough from kind treatment, however innocently it may be done. (For further information, see No. 45.)

TIME.

Every person connects himself, in his usual thoughts of himself, with all the lapse of time in which he can remember, and with all the lapse of time through which he expects to live. This he calls his life. He does not live in time that is past, nor in time that is to come. He actually lives only in the present moment. Yet he feels that he lives in the past, and will live in the time to come, because the past, the present, and the future are so connected that he cannot separate them. It is thus a law from which no one can free himself, that he shall suffer in the passing moment for the wrongs done in time gone by, and for the evils of which he dreads the approach. As this is certainly so, how little does he regard the operation of inflexible law, who provides for himself a load of self-reproach, for any gratification which he can procure by error or by crime!

Let us lay out of the case those errors and crimes which have been alluded to, and consider negligences and follies. Man was meant for action, and his actions were intended to enable him to secure good to himself. Good to himself depends on the performance of his duties to himself. Duty to himself requires that he should improve his faculties, and should avail himself of all the opportunities given to him for that purpose. The hours, then, which are permitted to slide by without any improvement, are lost. In so losing them, he breaks the law of the Creator. Apply this to the vocations in which one is to cultivate his mind in any business, mechanical, scientific, or learned. When one sees himself surpassed by others, and left far in the rear; when he is called on to measure himself against another; and when he sees that comparisons are made between him and others, greatly to his disadvantage—he may feel, and most men do feel, that they are thus depreciated because the precious time which was allotted to improvement has been passed in trifling amusements or in idle pursuits. To some minds, the suffering from such causes is extremely acute. They have no one to blame but themselves. The bitter remembrance which they have of the past, as connected with the present and the future, is the punishment for breaking a positive law. They may console themselves perhaps with the firm resolution that they will repair the wrong done in the past time by diligence in the time to come; but they find that time brings with it its own demands. They are fortunate, indeed, if they can do in one space that which belongs to it, and that also which belonged to another and in another season of life.

One cannot innocently say his time is his own, and that he may dispose of it as he pleases. His time is his life. It is given to him in trust. Like other trustees, he will be held to an account, in which there is no possibility of concealment, and where nothing will depend on proof. It may be supposed that it will be said to him, There was confided to your use a term of time; you knew, or could know, the laws prescribed to you in performing your trust: are you come from that trust to render an account of it, burthened with reproach from your own conscience, and with marks of guilt which you cannot hide? or, are you come without any advancement in the knowledge of your duties, and with no other account than that your days rolled by in childish pursuits or idle amusement, *no wiser* when you were severed from the world than when you left the cradle of infancy? or, are you come with the exalted acquirements which you might have, and with that innocence and purity which you would have, if you had read the laws of the created world, and those which have been revealed and placed before your eyes? Where have you read in these laws, that no duties to yourself, and to your associates, nor to the *Lawgiver*, were enjoined upon you? Have you not been told by every breath you drew, by every movement of your frame, by every thought of your mind, by every just pleasure that you have had, by every pang that you have suffered, and by all that you have been made capable of perceiving and learning, that there were laws prescribed to you, and that an account of your stewardship would be exacted from you by a Judge who cannot be deceived?

SELF-LOVE.

It is an invariable law of nature that every human being shall do those acts which he thinks will secure good to him, and that he shall avoid those acts which will occasion evil to him. Why, then, should not every one do any and every act in his power by which his own will may be gratified, and avoid doing any and every act which is disagreeable to him? The only answer that can be given is, that man is a free agent, intrusted with the power, and charged with the duty, of ascertaining for himself what is good and what is evil; and that this power and duty extend to those with whom he dwells in society, and also to his Creator.

Children always conform to the natural impulse of self-love, until they learn from the discipline which is applied to them, that they cannot have their own will without subjecting themselves to a suffering, the dread of which controls the natural impulse. They learn, after a time, that the greater good lies in giving up what they will to do, and doing what is required of them, rather than to meet the certain consequences. We think that the whole science of morals will be found in the principles contained in the truth above stated.

Self-love is just as strong throughout life as it is in childhood. It is that quality of our nature to which all excellence may be referred; but it is also that to which all unworthiness may be referred. As the dread of punishment, or an unwillingness to displease those whose kindness a child desires, will restrain him, or put him into action; so, in more advanced life, the dread of suffering a certain or probable evil, and the certainty of losing the good-will of others, will restrain or impel to act. With those whose minds have been properly disciplined, and who have learned to comprehend their relation to the Creator, there is a far higher motive, which is founded in a submission to the Creator's laws. As one goes on in life, he may or may not acquire more and more clear and just perceptions of what will be the greatest good to himself, and how he can obtain it. It is a self-evident proposition that if a person could certainly know what it would be best for him to do, or not to do, in relation to all things and persons, and under all circumstances, and if he should conform to this knowledge, he would best obey the impulse of self-love, and most exactly conform to the laws prescribed for his permanent wellbeing.

It cannot be too often impressed upon the youthful mind that *life is to be taken as a whole:* for if this extended view be not taken, it must frequently happen that it will seem right in certain circumstances, and when the view is limited to these circumstances, that certain acts may be done or avoided as the greatest good. Yet, if the consequences could be foreseen, they would disclose that this seeming good would turn out to be a positive evil. It often seems good to the young to avoid the performance of labours which are assigned to them, and to spend in amusement the time which should be devoted to fit them for duties which will be incident to their future condition. This misapprehension of good is to be lamented; but with some this is not all. Their own self-love prompts them to engage in a course of folly, so that not only do they fail to obtain that which is real good, but they find, under the mask of pleasure, that which proves to them to be in the long-run the most grievous suffering.

The same truth runs, in an endless variety of forms, into manhood, and through all the stages of life. We are impelled by self-love not only to provide for the craving wants of our nature, but to seek pleasure, riches, power, distinction, and luxuries. These propensities are given for wise and beneficent purposes. It is the misapplication of them, as seen in the world, which constitutes human misery. He is called brave and honourable who defends himself, even at the risk of life, against those who would do to him that injustice and wrong which would make the gift of life of no

value. But the brave, who invade the rights of others, and subject them, by violence, to losses and to sufferings, without cause, misapply this principle of action. To get riches by honest industry, or the reasonable exercise of one's talents, is a commendable use of self-love. To get riches by unfair and dishonest means, to hoard them up, and to brood over them in secret, is a pitiful misuse of this commendable impulse. To have power over one's fellow-men, and to use it faithfully, and for their benefit, is a relation which one may honestly and commendably desire, as a reasonable exercise of self-love. To seek such power by deceitful representations, and to obtain it by violence and fraud, and to use it for purposes of supposed self-benefit, and to the injury and oppression of others, is another form of self-love. But there are few, if any cases, in the history of mankind, in which self-love has appeared in the latter form, without eventually overwhelming the agent with disappointment and sorrow. It is true that for a time such a one may seem to flourish in his schemes, and command the applauses of those who look up to him in his apparently fortunate elevation; but, in the very nature of things, if his heart could be sounded, there is no one whom he looks down upon who is not more at ease than himself. His day of humiliation may be at hand, in the course of events which he cannot control; and if not, he learns, when it is too late to correct his error, that he has misapplied the impulse of self-love. This misapplication is to be seen in many cases of daily occurrence, and in things of little, as well as in those of comparatively great, importance. The principle is everywhere the same.

We shall be answered perhaps that all this is incident to human nature. There is no help, it is said, for these evils. Every boy who has learned Latin repeats the maxim, *Humanum est errare* (It is human to err). A more mischievous maxim was never invented. If men understood, as most certainly they may do, that they need not err, and that it is best for them they should not, they would rather adopt as a maxim that none but the wilfully ignorant, and the wilfully foolish, *err*. Such a state of things is yet afar off. It may seem to be foolish, indeed, to assert that any society should ever come to be so well informed as to make a proper use of self-love. Let us not despair. We may improve very slowly; yet, if every one does even the little that he can, in showing, by precept and example, what things a rational and accountable being should desire, and what he should avoid and reject, certainly the time may come when self-love will never be so misapplied as to be necessarily followed by suffering, by penitence, and sorrow.

Will it be denied that there is a certain best course of action for every human being in every possible condition in which he may find himself? Or, that no small proportion of human suffering arises from not having discerned that it was best, in past circumstances, to have acted differently, or not to have acted at all? Or, that whether one did or did not act, in the supposed case, that his motive was to secure to himself the greatest good of which that case was supposed to allow? If these things cannot be denied, then the great end of life is so to regulate self-love as that it may secure the greatest good. Let us suppose that every person in society knew what it would be best for him to do or not to do, so that his physical, intellectual, and moral condition should be as good as he could make it. His self-love would never be directed to any end which would impair his bodily powers or keep his mind in ignorance, or misinformed, or make him a subject of reproach or contempt in his own view, or in that of others. This, it will be said, is an impossible state of things. So it was said that it would be impossible to root out the use of *ardent spirits*. This great change is not wholly accomplished; but does any one doubt that great advance has been made towards its entire abolition? Let us go on, then, in the work of improvement. Let every one try to show the proper uses of self-love. The day may come when every one will admit that all the sufferings which may visit the human family are of their own making, those only excepted which arise from the general laws of the Creator. Even as to those, they may be greatly mitigated by intelligent moral agency; and when they do come, they can and will be endured with piety and resignation, if the sufferer can console himself with the certainty that he has done no wrong thing, nor neglected any proper one, to which the cause of his sufferings may be referred.

LABOUR.

It is commonly considered that labour is the *curse* declared to mankind, as a consequence of the transgression of the *first man*. It is foreign to our purpose to enter into any discussion as to the true meaning of this historical or allegorical account; the Christian revelation may not be dependent on a literal understanding of it. However this may be regarded under the influence of further reasonable research, we must take man as he is; and so considering him, labour is not an *evil*, but a *pleasure*. Is it a curse to man, as he now is, to be enabled *by labour* to comprehend the existence of the Deity, and the beauty and utility of His works? to adorn the earth, and bring its productive powers into action? to apply the material substances of the earth to reasonable use, convenience, and ornament? to expand and improve the human mind? to cultivate and strengthen the moral power? to secure and enjoy the comforts of a well-regulated society? Certainly these are the effects of labour; and labour so applied constitutes man's highest object and happiness.

There are two kinds of labour:—1. Mere bodily labour; 2. Labour of the mind. These two are sometimes necessarily combined. The mind and the body demand some sort of employment. No one whose mind is free from natural defect can prevent its action. It will think of something, good or evil, profitable or foolish. Every one who attends to the operations of his own mind, must be convinced that this is so. The body and limbs cannot be kept in any one position for any considerable space of time, unless they have been in action and demand repose. If it were painful to us to direct the action of the mind to useful labour, and if it were distressing or inconvenient to us to exercise our muscles for purposes which we believe to be proper, then it might be that labour is a curse; but many, nay all, who require of the mind to perform its duties to any useful purpose, and especially those who have disciplined the mind to an accustomed service, find that the absence of employment is an affliction. We cannot see how this should be otherwise, if we rightly comprehend man's relation to the mechanism of the universe, of which he constitutes an essential portion.

As to bodily action, it is seen that children in their sports go through a series of exertions, often exceedingly violent too, from mere pleasure. Men frequently exercise the body much more severely in matters of amusement than they have any occasion to do in necessary labour. This action seems to be a dictate of nature. In many cases of indisposition, bodily motion is the prescribed remedy, and is commonly a successful one. There are sound reasons why this should be so. There is a universal action of the material system to which man belongs, and a continual waste and demand for supply. Excepting only in the involuntary movements in man's structure, which are not confided to his care, he is required to aid nature in her operations. If he would put himself in the best condition to receive and derive pleasure from his daily food, he must keep himself in action. Those who have the least pleasure in using what was given to be used as the means of pleasure to the senses, are those who keep the body inactive. This is true of those who labour with the mind only; more strikingly true of those whom affluence excuses from labour of body and mind. They seek happiness in indolence and in luxury: they find it not, because they violate a law of nature. No product of the vineyard, the field, or the sea, however aided by inventive art, will furnish a welcome repast to one who sits in list-

less idleness, on a downy cushion, from breakfast-time till dinner. The day-labourer who sits down to his coarse meal, has a pleasure to which the luxurious idler is a stranger. The one receives a rational benefit from the kind and just bounty of nature; the other seeks it where nature has decreed that it shall not be found.

The labour of muscular action is not only in itself a pleasure, but it is the means prescribed to us for the acquirement of subsistence; for the gradual improvement of society; for applying natural and artificial products to our comforts, to our convenience, and to reasonable luxuries. Nor only so: this is the groundwork of all the beautiful and imitative arts; of the discovery and application of the chemical power of matter; of the wonderful contrivances by which man securely moves on the face of the ocean; by which he cultivates his acquaintance with the stars, and raises his thoughts to the Author of all being. Let us not, then, regard labour as a curse, but a blessing, and rank it among the many causes for thankfulness. It is obvious that muscular action would have been given to us in vain, if it were not directed by intelligence. There must, then, be labour of the mind. This is nowhere said to be a curse. If there be anything for which we should be specially thankful, certainly it is that we are blessed with the power of mental exertion. This labour is in itself an inexhaustible source of happiness; and in its fruits has made, out of savage man, a rational and improving social being. The most restless and comfortless of all creatures is he who has no occupation for his mind. If one would invent the most miserable condition for a human being, other than mere physical suffering of the most excruciating kind that can be without extinguishing life, it would be to deprive him of all employment of body and of mind.

Can there be a doubt that, in man's present condition, the ability to labour is his exalted privilege? And is he not accountable for this privilege? Is not reason given to direct him in the use of it? It is well known to those who have compared the condition of mankind in different ages, how much the labour of body and mind have been able to accomplish. Even within the last half century, the most surprising changes for the better have taken place, from the right use of this productive power. On this depends the civilised condition of the human family. From the joint labours of all who wish well to their fellow-men, there will be obtained, eventually, the knowledge of the best manner of using the products of the earth, the best mode of instructing and directing men in their social relations, the just homage due to the Creator, and the true purpose for which human life has been given.

To some descriptions of persons labour is irksome. They are obliged, in their vocations, to use certain muscles, and those only. They repeat the same act throughout the day. Their labour becomes tedious, because it requires little or no action of the mind. To this numerous class we venture to offer a relief which is within the easy reach of many of them. It is well known that the nature of habit is such, that the hands will do what they have been accustomed to do, without any obvious attention, and the mind is left to do what it will. The mind might be employed while the hands are busy, in pursuing some connected train of thought. Muscular action, so far from being an interruption to the action of the mind, may be made to assist it. Persons who think intently are often seen to have some habitual movement; and we have heard several persons acknowledge that their best ideas had come to them when they were engaged in some simple occasional duty, such as the folding of paper, or the cutting of the leaves of a book. The stir of body seems to produce a corresponding stir of mind. The relief which we suggest is, that sedentary labourers should provide themselves with subjects for reflection, and exact of their minds to attend to these subjects. By such simple means the memory may be strengthened, the stock of knowledge may be greatly increased, and the mind surprisingly invigorated. One might begin this exercise by attempting to remember, with the utmost precision, every act done during the preceding day, and so go back from day to day. Better still would it be, if the purpose were to see wherein one had not done as well as he might, and as he may wish he had done. This exercise may be applied also to the contemplation of subjects suggested by reading; and this contemplation will raise questions which will lead to the examination of books. There may be hundreds of poets, philosophers, and moralists at the work-benches in this country who have no thought of themselves that they are such. It is in the power of any person who can read and understand the English language, to strengthen his memory, give himself an interesting employment, and furnish himself with a rich fund of the truest philosophy, in this manner. He may commit to memory six lines each successive day of Pope's 'Essay on Man,' and on each day repeat all he had learned on preceding days. On the 218th day he would be able to repeat the whole essay. This might be done without losing one moment of time, and without making the slightest error in one's work. When accomplished, it would be an intellectual treasure for which any man might be thankful, and of which he might be justly proud. The first efforts may be discouraging, but perseverance will ultimately insure success. Every one who is accustomed to thinking can attest that most new subjects are at first confused and undefined; but that they gradually disclose themselves, and fall into shape and order, just as material substances used on the work-bench and the anvil take that form, smoothness, and polish, by successive operations, which the workman requires.

HABIT.

This quality of our nature has engaged the attention of many philosophic minds. It has been considered an *ultimate fact*, as it is called; that is, one of those qualities which, like respiration, digestion, and many others, are found to exist; and beyond which fact no investigation can be made. Its laws, rather than its nature, have been the subject of remark. It may be that habit is to be referred to the law of action, which appears to pervade all material and intellectual being. Life is divided into parts: in one we are awake, and active; in the other, wrapped in sleep, and quiet. Each successive day is a sort of new existence, in which we are to repeat many of the acts of the preceding day. We repeat these acts because nature demands the repetition of them. Also, almost every one is engaged in some vocation, on which he relies to supply his wants and gratify his wishes; and most persons have in view certain pleasures, which are innocent or otherwise. It appears to us that habit arises from this demand for action, and from the manner in which this demand is supplied. Action relates to ourselves, to other persons, and to things around us which minister to our wants; supplying its demands associates us with these persons and things. The want, whatever it may be, arises, and forthwith all things connected with satisfying it force themselves into notice, and these become a part of our very existence. It is a well-known fact, for example, that the appetite for food will associate itself with a particular hour of the day, and with persons, places, and objects of gratification; so that one becomes hungry rather according to the hour than the natural want.

It may perhaps be an ultimate fact, beyond which we cannot go, that those acts are most easily and well done which are oftenest done. One who uses a flail, an axe, a scythe, a sword, or a pen, can use either the better the oftener it is used, until he arrives at a point of excellence at which his power of improvement stops. This may perhaps be accounted for by supposing that the first effort which the mind makes to direct muscular action is the most difficult one. After repeated efforts, the mind seems to understand better and better how to direct, and the muscles how to obey, till at length a very slight effort of the mind seems to be all that is required, and even an effort so inconsiderable and rapid as not to be the subject of notice. On this truth seems to depend

the astonishing facility of action to which (among many other instances) jugglers and musicians attain. This is called *habit*, which word is derived from a Latin word which signifies custom or use. There are customs or habits of the mind as well as of the muscles. Persons who accustom themselves to extemporaneous speaking, acquire a surprising ease and readiness in the complicated action of conceiving, uttering, and expressing, by sounds, by looks, and gestures, whatsoever they would impress upon an audience. The mind has its own habits also, in the quiet of contemplation, and in exercising its various powers. It has its own associations, too, with external objects, of which many curious instances are stated in philosophical works.

The moral deduction which we make from these general principles is this—that there is a continual craving to do some act, to obtain some object; or a continually-recurring necessity to do some act, to prevent an evil or inconvenience. The frequency of this call upon us to do something, whether it be for eventual good or evil, leads to the practice, custom, or habit of doing; and in some cases the impulse to act becomes so powerful, that reason, self-respect, the laws of society, and even those of the Lawgiver of the universe (if these are heeded), present no sufficient barrier to the impulse. It is to this all-important truth in the nature of man that we earnestly invite the attention of the young. The capacity to create habits is the consequence of the power given to us to promote our own welfare, individually, socially, and as accountable beings. This capacity was designed to fasten us down to that course of action which will accomplish these ends of our existence. Like everything else with which we are intrusted, it may be rightly and profitably used, or may be misused, and perverted to our certain ruin. Habit is the kindest friend or the cruellest foe to human welfare. When it assumes the latter character, it approaches us in the most deceitful and seductive forms. It comes wearing attractive smiles—it delights—it fascinates—it substitutes its own irresistible will for our own—it triumphantly points to the gulf to which it onward bears us. The fly caught in the spider's web is a faint illustration of the power of habit. He knows from the first moment his destiny. The gambler, the drunkard, and the felon, when and how do they learn that they have been caught in the web of habit!

INTEMPERANCE.

This word has attained a meaning more limited than its proper one. It is applied commonly to persons who take habitually ardent spirits; but it is equally applicable to all transgressions of the law of moderation. All acts which may be lawfully done for one's own good, when carried to excess, are acts of intemperance; and all such acts are sooner or later followed by some sort of suffering, according to their nature and degree. Excessive labour of body or mind is as much an act of intemperance as to make one's self dull and stupid by taking food, or irrational and giddy by taking spirits. But there is a wide difference in the degree of immorality in the kinds of excess. An intemperence in study, which brings untimely death in some instances, is not condemned as an immoral transgression (though it certainly is such), for the motive which leads to this intemperance is regarded as an honourable one. The loss of health and character, from abusing the privilege of taking nourishment, is universally condemned, because the motive, and the acts done in obedience to its impulse, are irrational and disgraceful.

There are two kinds of intemperance against which the young should be warned: the one is drinking, not for nourishment, but for pleasure; the other is, using tobacco. It has been already demonstrated that nature requires a certain quantity of proper food to maintain a healthy and happy condition of body and mind; also, that excess of any kind will be followed by suffering. This is just as certain as that a full vessel must throw off just as much as is added to its contents. It is very natural that young persons should assemble for the sake of society; being assembled, they must have some employment for the muscles of the body and the craving of the mind. We have shown that such propensities spring from natural constitution, and that they must be satisfied. There must be a community of purpose in the meeting. That may be found in any muscular action in which all can join, and which has some definite object, as athletic games; or it may be found in some intellectual employment which is common to all present. Unhappily, the most frequent bond in such meetings is *to drink*, for in this all can join. Connected by this common attraction, the mind is called into action; but for what purposes? Those who frequent places of public entertainment can best answer this question. Some who are sent to public seminaries can also answer it; and some can answer it who know that they are maintained *there* by pinching economy *at home*. Some others could answer it, who never had a serious thought why such places were established, nor for what uses they were intended.

We refer again to the demonstration heretofore made, that the law of nature, which cannot be broken with impunity, inexorably admits so much, and no more. Let us, then, look in upon a gay company of young persons around a table, and half concealed by tobacco smoke. What sort of air are they breathing? what sort of substances are they casting into their physical system, already bursting with excess? what sort of thoughts have they in their minds? and what sort of words are usually flowing from their lips? We *could*, but will not, answer these questions for them. Let us pass by this revel, and go to the next morning. We might then propound some other questions. Are not their heads heavy, hot, and throbbing? Are not their eyes thick and burning? Are not their tongues white and parched? Do not the nerves tremble? Is not the mind muddy and confused? In what condition are they to perform duties to themselves, to those they serve, to instructors, to affectionate parents? *Is not this dear-bought pleasure?* How long can nature bear to be *pleased* in this manner? But the matter does not stop here. The same scene is repeated again and again. *Soon habit asserts its awful dominion;* and then the scene *must* be repeated. The craving is insatiable, and cannot be resisted. From social drinking, the step is an easy one to solitary drinking. *There is no resting-place for habit; everything in this system of being must keep on, or be at an end.*

It is believed that the sort of criminal excesses to which we allude are not from the promptings of nature. We venture to assert that they are entirely artificial in the beginning. It seems irrational that any one should like to take more of anything than nature requires; and more so, that one should naturally desire to take burning liquids to the degree of intoxication, or perhaps to take them at all. It is believed there is no such natural propensity; but that such liquids, when first taken, afford less pleasure than pure water. The taste for these articles is created by association, by imitation, by fellowship; and, above all, because there is a kind of tradition that it is *manly* and *social* to drink. Songs in praise of the juice of the grape, and of meaner liquors, have some effect in the delusion of drinking. There is a fascination in combined poetry and melody. Such combinations are well known to have the most powerful influence in national associations. They inspire a feeling which bears men on to victory or to death. The songs of Bacchus do the same. They conquer the strength of those who sing, and of those who listen to them, and sometimes lay their admirers not in a bed of honour, but of contempt.

If one could get the ear of such a misguided youth, he would not do much by reasoning with him. He might do something by getting him to reason for himself. It would be necessary to bring to his view some facts from which he could reason. He must be made to know what a wonderful contrivance the digestive power is, and by *whom* it was contrived. That its purpose is to take the inanimate substances which

nature provides for it, and convert them into living sensitive being, and possibly into thinking power and immortal spirit. He must be reminded how easily every human contrivance may be deranged, and the more so, and irreparably, in proportion to the minuteness and delicacy of construction. But as one might fail to make a thoughtless boy comprehend the nature of the principle of life which resides in his own bosom, because he cannot see it, some illustration must be made. Unhappily there is none which can be effective to this end. The nearest which occurs to us is this. Let us suppose, then, one knows the use and the value of the human eye in its physical, intellectual, and moral relations; that he knows he must take care of it, and frequently bathe it in cold water, as well to cleanse it as to refresh and brace it, so that it may still be an eye to him, when decline and old age shall come. Let us further suppose that, instead of so using and so preserving this delicate organ, he should, when he first rises in the morning, let fall into it a drop of burning spirit, and at eleven o'clock another, and so on, at the proper hours, until he sleeps again—how long would the power of vision remain to him, and how soon will this organ of delight become a source of insufferable pain? It must be much the same with the digestive organs as to the abuse of them.

If one could in some such way bring home to the perception of an erring youth the grievous wrong which he is inflicting on himself, he might be prepared to reason on his own case, and might be asked some such questions as these:—Is it of any consequence to you to be free from suffering and sorrow? As you must inevitably keep company with yourself as long as you live, is it of consequence to you to make of yourself a pleasant and agreeable companion, and not one who will be continually complaining and upbraiding? Is health of any value to you? Can you use your limbs, and the faculties of your mind, as you would like to do, without it? Can you have health, if your habit is to throw into that delicate part of your system whereon the action of life depends, substances which excite it to an unnatural exertion, or deprive it of all power of exertion? Does not every part of your system sympathise with the injustice which you do to your digestive organs? Will not your brain, and consequently your mind, suffer by this violence? Do you expect to attain middle age and old age? Will not the seeds you are now sowing come up in that space of time? Will they come up in the form of enfeebled muscles, chronic aches, self-reproaching thoughts, the loss of the capacity to enjoy the bounties and beauties of creation? Will they grow up to overshadow your moral sense, and shut out the delights of intellectual power? Was life given to you for the few years in which you can sing, drink, and 'enjoy yourself,' or that you may enjoy life in every stage of it, as a rational being, and by rendering your homage to nature in obeying her laws, and your gratitude to Him who ordained these laws for your happiness? Do you not look forward yourself to be at some time a parent? Have your own parents ever so conducted themselves towards you that you have a right to punish and afflict them? Are you willing that your parents should see you and know you as you know yourself? If you should be a parent, are you willing that your children should be told with whom, and in what manner, you 'enjoy yourself?' Would you tell them how you spent your youthful days and nights, and recommend to them to take yourself as an example?

TRUTH AND FALSEHOOD.

These two subjects relate to two parties:—*first*, The individual who speaks truth or falsehood; *secondly*, The individual to whom it is spoken. We propose to consider this matter only in relation to the former party, and as to him in two views:—1. Whether there be any, and what law, which requires that the truth should be spoken; and, 2. What good or evil one may do to himself by lying.

1. One reason why truth should be spoken is, that the knowledge which any one person can have from the use of his own senses, in many things which most materially concerns him to know, is very limited. He must therefore often depend for his knowledge on what others say to him; and when the thing spoken of is exclusively known to the party speaking, the other must rely entirely on what he says. If, therefore, it be considered how great a part of the most serious concerns in life proceed on declarations made by one person to another, we may readily conceive, that if these could not be relied on, the affairs of mankind would be greatly embarrassed, and confidence in each other would be destroyed. As this matter of speaking the truth is one which concerns all persons, so all persons agree in holding liars in contempt. Even the very lowest persons consider themselves to be disgraced when charged with the guilt of lying. They can endure charges which would subject them to public punishment, with more composure than they can endure this. A lie is always understood to be resorted to to secure some advantage or prevent some evil to the person who resorts to it; or to occasion some disadvantage or injury to the person to whom, or of whom, the lie is told; sometimes both these purposes concur. The object in view is always an immoral one, and the means used are always regarded as disgraceful. It is at once obvious that wilful falsehood is forbidden by natural law, which is intended to regulate our social relations, and is expressly forbidden by Divine law, which condemns all acts of fraud and deceit, and commands us to do to others as we would have them to do to us.

2. It is a rare occurrence that any one who descends to falsehood succeeds in the object which he may have in view. He is commonly detected, and if not, is suspected, which may operate quite as much to his disadvantage. If he should escape detection and suspicion, he lives in constant fear of both. He has a very troublesome secret to keep. If he should be able to do this, still he cannot hide it from himself that he is a liar; and such a person, by natural justice, is compelled to pass that sentence upon himself which he knows that others would pass upon him if they were as well informed as he is. A liar is therefore obliged to feel like a guilty person, and a habitual liar very soon comes to look like one. If there be no higher motive than one's own interest and welfare in speaking the truth and avoiding falsehood, this is a very sufficient one. If a man is known to be a person unworthy of confidence when he speaks, he has not the benefit of being credited even when he speaks the truth; he voluntarily deprives himself of the advantages of social life; his assertions secure to him no credit; his promises are contemned; he makes himself to be alone in the very bosom of society, for every one shuns him. In the administration of justice in courts, a person is not regarded as a witness whose common reputation is that he is not believed when he speaks. The objection to him is not that he might not tell the truth in the matter which is on trial, but that such a person ought not to be received as a witness because he cannot be credited in anything that he says. When such a person has been called and examined as a witness, it is usual to examine other witnesses to prove his character; and if it be proved that he is unworthy of credit, what he has sworn to is disregarded, though he may have declared the truth. This is the common fate of all such unfortunate persons in society as well as in courts. Independently of the criminality, lying is very poor policy. If the object be to obtain a supposed good, it rarely is obtained by such means; and if it be, the price so paid must always be greater than the good is worth. If the object be to conceal a wrong done, it is rarely successful; and if not, it leaves the offender without excuse for his error, and adds another wrong. If the object be to charge an innocent person with a wrongful act, or to deprive one of his good name, or of some lawful possession, or subject him to some evil which he ought not to endure, the offence is of that cast which the law of the land holds to be *malicious*, and it deals with such offence

accordingly. In short, it is very difficult to violate any law of natural justice or Divine prohibition without encountering an adequate punishment; and it may be assumed that the punishment which follows lying is as certain and just as in any instance of criminality. If every tenant of every prison, and if every person who is in the custody of a goading conscience, were asked this question, *What was your first step from innocence and purity?* he would probably answer, *Telling a lie!*

SINCERITY AND INSINCERITY.

These are other names for truth and falsehood. They are not commonly applied to the most serious concerns of human life, but to what are called the 'imperfect obligations.' Such obligations, it is well known, are not enforced by the law of the land, but are binding as duties arising as well from natural law (reasonably expounded) as from Divine law. Sincerity is a duty to one's self, because it is demanded by self-respect. As every one has an individual separate physical being, so every one has a *separate circle* within which he exists, and into which no one has a right to intrude. His thoughts, motives, opinions, and policy are his own. What he will or will not do (so that no wrong be done to others, and no act of duty be withheld from them) is for him to decide upon. Within this circle he makes up his judgments on all persons and things. In his outward deportment he must frequently act in a manner not consistent with these judgments. As an example: one has made up, from repeated observations of a certain individual, a very clear, but very unfavourable judgment of his qualities; but there is no occasion to disclose what the judgment is. The observer is obliged, or finds it convenient, to meet this individual, and to deal with him, and perhaps to interchange courtesies with him. It is undoubtedly proper to manifest the respect, in such a case, which the decencies of life require, and to show the common proofs of good-will. There is no insincerity in this. Though no one can possibly avoid forming judgments of others, nor avoid liking or disliking them, even including very near friends and relatives, yet there may be a positive violation of duty in publishing these judgments or in disclosing these feelings. The Divine law, 'Judge not, that ye be not judged,' does not, it is believed, interdict these judgments, because they cannot but be made; but it forbids the wanton, unnecessary, and injurious publication or manifestation of them. Those who are keen observers of their fellow-men, see in their faces, in their manners, in their modes of speaking, in their tones of voice, in the sentiments which they express, &c. causes for respect, esteem, confidence, and approbation; or they may see causes for disrespect, suspicion, strong disapprobation, and disgust. But all these things belong to the *individual circle*. It is not insincere to keep them there. On the contrary, society would be intolerable if they were not kept there; it is very hazardous to the observer to let them out unnecessarily. He may be mistaken both as to the favourable and unfavourable judgments which he forms. Further observation, new circumstances, unexpected changes, may essentially correct his judgment, and therefore a prudent man will keep them to himself: they are his own peculiar property, and were obtained for his own use. The worst form of insincerity is undoubtedly that which leads one to pretend to feel a warm friendly interest in the welfare of a person who is an object of indifference to him. This is a charge which has been frequently brought against the dispensers of patronage. There can be no doubt that public men, from their peculiar situation, are liable to be greatly annoyed by applications for the exercise of their influence in behalf of individuals in whom they take little or no interest; and in replying to these applications great caution and delicacy require to be employed, lest, on the one hand, they give offence by their bluntness and sincerity; or, on the other, excite expectations which they have neither the ability nor the intention to fulfil. The petitioners may be over-sanguine, and may, from the courtesy of the reception they meet with, be led to entertain unreasonable hopes which are destined to be disappointed; and therefore it is incumbent upon those to whom the applications are addressed, while they say nothing that can offend the delicacy, or hurt the feelings of the applicants, to express themselves in such a manner as not to excite any hopes which they are not only able, but willing to realise. The same rule ought to be observed by individuals in every station of life; and then fewer disappointments would take place, and more confidence would be entertained between man and man in the unavoidable intercourse of society. Insincerity is often demonstrated by paying false and silly compliments, which assume the form of *flattery*—a word which is derived from the Latin, and signifies wind, breath, puff. This is a kind of aliment which perverted self-love finds to be exceedingly pleasant. Although it is in truth precisely what its origin indicates, there is hardly a man, woman, or child who is not disposed to partake of it, if it be artfully disguised. But, on the other hand, all sensible persons, of whatever age or sex, who see what it is, and why offered, feel for the flatterer the contempt which he deserves. This insincerity is, and ought to be, deemed a high offence. It implies art and deceit in the flatterer, and sufficient weakness in the flattered, to be subdued to the purpose in view. The flatterer's purpose may be to secure to himself no more than a better esteem than he can have any pretence to, and it may be, through that, to secure to himself something which may be very costly to his victim. All extravagant commendation of any person, however estimable may be his qualities, and however highly they may be appreciated by the bestower of the praise, ought to be avoided. The praise may be perfectly sincere, but still it is a violation of good manners, and is a direct insult to the understanding of the person to whom it is administered. Sincerity requires no such breach of the other moralities; and whenever it is exercised in such a manner, it degenerates into *rudeness*.

CIVILITY.

The well-being of society would be greatly promoted if the nature and use of this Christian virtue were more generally known. We take this to be, in personal intercourse, the observance of the command, Do to others as you would that others should do to you. The most rapid glance at any community shows this—that some of its members are brought into contact, in matters of business, necessarily; others meet, incidentally, who have no particular connection; others meet for social purposes, in various forms; and that there is a large proportion who know of each other very little beyond the fact, that they are of the same country, and perhaps not even that. There must be a *best rule* of deportment for all these classes; and no one will deny that if this rule were defined, and faithfully applied, there would be much more of everyday comfort and complacency in the world than there is well known to be. If we rightly understand the meaning of civility, it is the manifestation of kind feelings, and of a desire to do all things which are to be done under the influence of such feelings, in a becoming and agreeable manner.

If every person understood the true foundation of society, the common origin of all its members, their natural and necessary sympathies, their community of interests, their necessary action upon and with each other, it might be supposed that all who are reasonable would be civil. They would be so because they would promote their own good, because they would be doing what it is proper to do to promote the good of others; and because they would know that in so doing they would conform to the design of their creation. We do not include under the term *civility* the great duties of justice, acts of munificence, important personal services. These arise out of some special relation which an individual bears to one or more other individuals. It seems to be limited to the manner in which the common or accidental intercourse of the members of society in general should be carried on. This matter may be

better understood by some examples. Thus if one comes into the presence of another as a beggar, servant, labourer, mechanic, trader, merchant, farmer, lawyer, physician, clergyman, or public officer, or if it be a female, or child of either sex, there may be very various modes of receiving these different persons—yet certainly, by every one of the laws which we are endeavouring to illustrate, these several persons are entitled to civility. Even the beggar—perhaps one should rather say the beggar in particular—if not deformed by voluntary transgression, should be received with civility; that is, gentleness, kindness, decorum are to be observed relatively to each one. Why? Because no man can afford to be deemed insensible to the cause of reasonable humanity; nor a stranger to the decencies of life; nor ignorant of what is due from him, nor to him, in any of his proper relations.

There is perhaps no kind of incivility more contemptible than that which is exercised towards those servants of the public, who would be liable to the loss of their situations were they to resent—as they must naturally feel inclined to do—the insolence to which they are frequently subjected. It is no uncommon thing to hear young men giving their orders in the most authoritative and offensive manner to waiters at inns, stewards of steam-vessels, or any other class of functionaries whose services for the time may be at their command; and abusing the poor fellows who are doing their utmost to serve them for their stupidity and awkwardness, while they may all the while be performing their work in the most efficient and unexceptionable manner. And this impertinence they employ for the purpose of impressing those who may be witnesses of their behaviour with a favourable opinion of their smartness and knowledge of the world. They could not adopt a surer plan to defeat the object which they have in view; for every well-bred person will regard their conduct with disgust, and will look upon it as a sure indication of ignorance, impertinence, and want of sense. This is an error, however, which, in the great majority of instances, time and experience will correct. But we sometimes find similar conduct manifested by those who cannot plead youth and inexperience in justification of their coarseness and incivility. Such persons we are in general quite safe in setting down as individuals who wish to appear above the sphere in which they are entitled to move, and who, feeling that they have no claim to the character which they have assumed, endeavour to conceal their deficiencies from the observation of others by behaving in a rude and brutal manner to those who are prevented by their position from resenting such conduct.

There is one other consideration which operates on all men who have had much experience in the world. Men and things change, and take new and unexpected relations. Persons who have been long, and even intimately connected, suddenly or gradually sever; persons who have known little of each other, and that little uninteresting or unfavourable, are brought in contact by some unexpected turn of affairs. Sometimes one needs favours, or at least good-will, from those he never thought to be of the least importance to him. In such, and in a multitude of other circumstances, one may find the advantages of having been acquainted with the virtue of civility, which implies that one has given no unnecessary offence. There are other cases in which a person may be called on by duty to do things disagreeable to himself, and exceedingly so to others. But there cannot be any good sense in performing such duty morosely, and with inhumanity.

POLITENESS—GOOD MANNERS.

A refined species of civility is sometimes expressed by the term *politeness*, which is an exterior indication of good-breeding or good manners, and may be defined as that mode of behaviour which not only gives no offence, but which affords agreeable sensations to our fellow-creatures. In our intercourse with the world, this species of civility is imperative. We possess no right to give offence by language or actions to others; and we are bound to conduct ourselves agreeable to the reasonable and set rules of society. Some severe writers on morals have confounded *politeness* with insincerity. They seem to imagine that the act of speaking gracefully to another is necessarily mere grimace, or an empty flourish signifying nothing. In many instances, with insincere people, this may be the case, but it is not so with those of well-regulated minds. It is always better to speak politely—that is, with extreme propriety and delicacy—than coarsely, sulkily, or impertinently. We say cultivate politeness of manner by all means, for it is *refined civility*, and will spare both ourselves and others much unnecessary pain.

Civilised society has in the course of time instituted certain rules in the code of politeness, which, though of little actual value, it is every one's duty to learn, because by knowing and acting upon them, we can make life glide on much more smoothly and pleasantly than if we remained in ignorance of them. These rules are sometimes called the rules of *etiquette*. We shall here briefly allude to a few of the more important of these social regulations:—

1. *Honour to the Female Sex.*—Women are physically weaker than men. They are unable to defend themselves from insult or injury, and it would be considered indelicate for them to do so, even if they possessed the power. For these and other reasons, it is only simple politeness and a sign of good sense to render any little service to women—to assist them when they appear in any difficulty, to speak respectfully of them and to them, and to give them honour whenever it can be reasonably required. It will be observed, therefore, in what is called good society, that women are treated with exceeding delicacy and deference: they are offered the best seat, or the only seat if there be no other; allowed to walk next the wall, or at the farthest point from danger, in the street; never rudely jostled against in a crowded thoroughfare; and are always parted from with a respectful bow. All this is considered essential in good manners, and attention to it will not in the smallest degree degrade any man in the opinion of the world. At the same time, as respects the women who receive these attentions, it is expected that they will not 'give themselves foolish airs,' or presume on the forbearance and kindness of the stronger sex. In fact, no female will do so who is acquainted with good manners, or wishes to avoid being despised.

2. *General Courtesy and Respect.*—It is incumbent on every one to be courteous or respectful in his intercourse with neighbours, acquaintances, or with the public generally. To inferiors, speak kindly and considerately, so as to relieve them from any feeling of being beneath you in circumstances; to equals be plain and unaffected in manner; and to superiors, show becoming respect, without, however, descending to subserviency or meanness. In short, act a manly, courteous, and inoffensive part in all the situations in life in which you may be placed. Society, for good and sufficient reasons, which it is needless here to explain, has ordained certain modes of address, and certain exterior signs of respectfulness, which it behoves us to support and personally attend to. In Eastern countries, as of old, it is the custom to uncover the feet and to sit down, in token of respect, on going into the presence of kings, or on entering any religious edifice or private dwelling. In our country, the custom is entirely the reverse. It is an established mark of respect to uncover the head and to stand, in the situations which we have mentioned, and to this point of etiquette we are bound to adhere. We must not, from any crotchet of our own, violate the rules or customs which society sanctions and enjoins, as long as these rules and customs are not opposed to reason and sound morals, and only refer to such trivial arrangements as taking off our hat, making a bow, shaking hands, or other matters equally unworthy of deliberate consideration. None but persons of a silly, eccentric turn of mind think of disputing about these trifles. On the same principle

we should give every one the title which, by law or courtesy, he usually receives.

3. *Personal Behaviour.*—A well-bred man is always known by the perfect ease and tranquillity of his manner. These are points to be carefully cultivated. Acquire, if possible, an easy confidence in speaking, so as never to appear abashed or confused, taking care, however, not to fall into the opposite error of forwardness or presumption. Persons moving in the highest circles of society seldom or ever allow themselves to appear disturbed or vexed whatever occurs to annoy them. Perhaps there may be an affectation of indifference in this; still their conduct is worth admiring, for everything like fidgetiness or boisterousness of manner is disagreeable to all who witness it.

Carefully avoid the following things in personal behaviour:—Loose and harsh speaking; making noises in eating or drinking; leaning awkwardly when sitting; rattling with knives and forks at table; starting up suddenly, and going unceremoniously out of the room; tossing anything from you with affected contempt or indifference; taking anything without thanking the giver; standing in the way when there is scarcely room to pass; going before any one who is looking at a picture or any other object; pushing against any one without begging pardon for the unintentional rudeness; taking possession of a seat in a coach, theatre, or place of public meeting, which you are informed belongs to another; intruding your opinions where they are not wanted, or where they would give offence; leaving acquaintances in the street, or a private company, without bidding them good-by, or at least making a bow to express a kindly farewell; slapping any one familiarly on the shoulder or arm; interrupting any one who is conversing with you; telling long and tiresome stories; whispering in company; making remarks on the dress of those about you, or upon things in the room; flatly contradicting any one, instead of saying, 'I rather think it is otherwise,' 'I am afraid you are mistaken,' &c.; using slang expressions, or words of a foreign language; acquiring a habit of saying 'says she,' 'says he,' 'you know,' 'you understand,' &c.; helping yourself at meals without first asking if you may not assist others to something which they would like; picking your teeth with your fork, or with your finger; scratching or touching your head; paring or cleaning your nails before company; mentioning the price of any article of food or drink which you are offering to guests; asking questions or alluding to subjects which may give pain to those you address; neglecting to answer letters. It would be easy to enumerate many other things which should be avoided as savouring of bad manners, but these will be sufficient to indicate the principle of politeness, and if that be understood, there can be no difficulty in knowing how to act with delicacy and discretion in all the concerns of life.

4. *Gentility and Vulgarity.*—By attention to the rules of good-breeding, such as we have just alluded to, the poorest man will be entitled to the character of a *gentleman*, and by inattention to them the most wealthy individual will be essentially *vulgar*. Vulgarity signifies coarseness or indelicacy of manner, and is not necessarily associated with poverty or lowliness of condition. Thus an operative artisan may be a gentleman, and worthy of our particular esteem; while an opulent merchant may be only a vulgar clown, with whom it is impossible to be on terms of friendly intercourse. Vulgarity of manner is often exhibited in its most offensive form by persons originally of humble birth and breeding, who have risen to wealth by the force of fortuitous circumstances. It is not uncommon to hear persons of this class, particularly 'ladies,' speaking of 'my coach,' 'my house,' 'my governess,' 'my family,' 'my servants,' 'my furniture,' and so forth; all which is *real vulgarity*, and indicates a low tone of breeding, and weak understanding on the part of the speaker. A man or woman of refined taste never alludes to matters of dress, domestic convenience, or things strictly personal, and rather endeavours to direct conversation into those channels in which all present may harmoniously join.

ANGER.

One of the most important of our private duties is the due regulation of the passions. We naturally possess certain mental affections called *propensities*, which, when properly restrained, serve a good purpose, both individually and socially, but when let loose, or badly regulated by the understanding, lead to the commission of many vicious and abominable actions, which in moments of calm reflection, and when our conscience is aroused, we deeply lament and regret. Irritability of temper, as demonstrated in the passion of anger, is one of the most unhappy of these derangements of our intellect.

The causes of anger are supposed to be these:—*First*, by the law of nature and of society, every one has rights in what he regards as his own property; *second*, one has a right to hold unimpaired whatsoever he can justly acquire in reputation and character; *third*, he has a right to have his feelings respected by others, if he do no wrong to their feelings; *fourth*, he has a right to have the like rights respected in those with whom he is necessarily connected by family and social ties; *fifth*, he has a right to be treated with justice, and according to established laws, by those who are intrusted with power; *sixth*, he has a right to have those who are bound with him in a common subjection to such laws, treated with justice. Whenever any one is offended by the violation of any of these rights, he may be justifiably angry. But in what manner, and to what end he shall express his anger, so as to do himself the greatest justifiable good, is the thing to be known.

Every one who has had a violent fit of anger upon him, knows that it was to himself (independently of the cause and object of his anger) a painful and even a very distressing sensation. No one ever looked back upon such a state of things, as to himself, with satisfaction, but generally with regret, and sometimes with remorse. He feels humbled and grieved in his own estimation of himself. He may too well remember that he used expressions and did acts which he is grieved to have resting in the memory of others or in his own. It is probable, also, that no one ever saw another in a violent passion without feeling that this angry person was degrading himself, and acting more like a brute than a rational being. Whatever be the cause of such anger in another, cool spectators always regard the angry person as under a temporary loss of reason, and in danger of doing some serious mischief, and are prompted to restrain him. Every one feels in such a case that the least that can happen to one so acted upon, and so acting, is that he is preparing for himself hours of self-reproach and of bitterness. If no one likes to remember that he was violently angry himself, and if he is offended in seeing others so, it must be admitted that violent anger is contrary to natural law, as it most certainly is to Divine law. It is an abuse of the trust confided to us to promote our own welfare.

It is consistent with reason for any one who is under the influence of anger to be prepared to ask and answer the question, whether the wrong is real or only supposed, and whether he is himself free from the first imputation of having occasioned by his own error that which he regards as a wrong? If the offence is real, other questions arise of this nature: What real good shall I secure to myself by attempting to get a reparation? and in what respect shall I advance my own welfare by attempting to punish the offender? May I not, in either of these attempts, involve myself by words or acts in some wrong, and give my adversary the advantage of finding me an offender, in trying to vindicate myself? If I could succeed in my attempt, what will it come to? Shall I not make the wrong done to me more notorious, and subject myself to the pity and compassion of others? Is it not better to be silent, and quiet, and leave the offender to time and his own conscience, than to engage myself in a controversy which is sure to be vexatious, and in which I shall run the risk of doing wrong, and

in which I shall not be likely to get any good? If I succeed in humbling my adversary, I shall surely make him my enemy for ever; for, in the nature of man, he is slow to forgive the wounds inflicted on his own self-love. When this matter is over, and time has dissipated the mists which now prevent a clear view of it, and when other feelings and sentiments have arisen, shall I like myself the better for having been silent and quiet, than if I shall have attempted to command justice and to inflict punishment? It is probable that young and ardent minds, and those who are looking back by the light of experience, will answer such questions very differently. But the experienced can tell the young with sorrowful truth, that among the most painful sufferings of life are to be numbered those which have arisen from sudden impulses of anger, expressed in words or acts. The experienced can also tell, with like truth, that in the common occurrences of life, angry words and acts have seldom if ever accomplished the purpose for which they were intended; they have neither obtained justice nor punished the offender; but on the contrary, they have often converted the injured party into an offender himself, and involved him in bitter recriminations, keeping up an irreconcilable aversion, and even enmity, through life. We have so far supposed that a real and justifiable cause of anger existed. But it is in many cases imaginary, especially among young persons. They take up sudden impressions concerning the supposed conduct and words of their associates and acquaintances, when no such conduct or words have occurred; or if any did, none with intention to wound or offend. If there be one case in which an individual feels himself peculiarly and painfully humbled, it is when he has manifested anger towards one who has committed no offence, or who is entirely unconscious of having done so.

It sometimes happens that an offended person can restrain himself from expressions and words when he has been seriously offended. But he cherishes a malicious sort of feeling against the offender, broods over the wrong done, and permits his imagination to inflame the sense of wrong, until he makes himself too unhappy, under this excitement, not to express it in some mode which will occasion pain or affliction to the offender. If there be any one who has fallen into such a condition, he may be asked, whether he knows of anything in the nature of regret or remorse for his own follies and sins, which is so exceedingly burthensome, as to carry about with him the feeling of aversion, ill-will, and malice, towards one who has offended? What, then, is to be done? angry words and acts are forbidden by the law of nature, by self-respect, and by convenience; the memory of an unavenged wrong is intolerable. Is there no remedy? We think there is one in every person's power. If the individual with whom one is at variance can, by calm expostulation, or by mutual friends, be brought to a just perception of the case, that is the remedy. If that fails, there is another; it is of high authority: 'If thine eye offend thee, pluck it out.' Blot such a person from the memory; never permit him to come into your thoughts. Will you pass your life in humiliating bondage to such a one? We say, *blot such a one out of your memory.* You do him no wrong by that. You do yourself a just and great good: you cut a moral cancer out of your heart.

Among the sources of affliction in human life, is the uncalled-for interference of third persons in the angry collisions of others. It may sometimes be an unavoidable duty to take a part in an angry quarrel. When this duty is to be performed, it concerns every one who is mindful of the trust confided to him of taking care of himself, not to engage in the controversy in such a manner as to become a principal party in it. As a general rule, it is the safe course to let angry persons settle their own concerns as they can. Certainly no one who claims to be regarded as having a discreet sense of his own welfare, plunges himself into a quarrel. Yet this is a very common thing. It is often seen in schools. Parties and divisions grow up, extend, and become more and more bitter, from the most trifling causes, and are often carried out into manhood, and show their evil consequences through life. This is so because impressions made in that season are very vivid and durable. It is a duty sometimes to take a part in controversies. It must be remembered, when one engages in such quarrel, that one is dealing with persons who are under a sort of derangement, and who are most exceedingly sensitive, and perhaps mutually vindictive. Those who interpose are bound, by the law of self-regard, to interfere with calmness and sound discretion, and so to conduct themselves in word and deed as to do no evil to themselves while they attempt to do all the good possible to the angry parties. On the whole, mismanaged anger is a prolific source of suffering. Yet when calmly looked back upon in a great majority of cases, the cause was some insignificant trifle, magnified into serious importance by angry words and pitiful acts. Such is the propensity of persons to busy themselves in the quarrels of others, that there is little reason to hope that a preventative can be successfully offered to any but to those who have studied out and who reverence the will of the Deity, as disclosed in the nature of things, and in his own positive law.

SELF-RESPECT.

Every one has some sort of opinion, more or less distinct, of all persons with whom he is acquainted. This opinion may embrace intellect, disposition, virtues, vices, personal appearance, deportment, condition in life. So also every one has some opinion of himself on the same, and on many other subjects best known to himself. When one examines his own opinion of himself, he seems to do it as though he were another person. He uses the eyes of others. He turns aside, as it were, by the way, to see himself pass by. The judgment which one forms of himself is often much more unsound than that which he forms of others. The eye cannot see itself; so neither can any one see himself. He must use a mirror. There are many of these. History, books, daily example, his own experience, every person he comes in contact with, are mirrors. If he sees himself in these, and thereby corrects his own errors and follies, and gives himself reasonable and just credit for his attainments, he may come at length to be entitled to entertain a respect for himself. There is a certain best thing to be done, and a certain best manner of doing it, in all possible circumstances in which one may find himself. Nothing is entitled to be considered *best* which does not conform to natural law, the law of God, the positive law of the land, the conventional laws of society (so far as they are founded in reason and good sense), and to the decencies of life. To that best thing and to that best manner no one perhaps ever perfectly attains; but it cannot be doubted that there is some such standard. He who comes the nearest to it is he who is best entitled to entertain a respect for himself.

PRIDE.

There is a kind of pride which is often mistaken for *self-respect.* We hear of honourable and of laudable pride. We take pride to be that self-esteem in which a man holds himself. It may be founded in his estimation of the qualities of his mind, in his attainments, in his possessions, in his strength, his beauty, his parentage, and descent. It may also be founded in a consciousness of virtue, and of having faithfully done one's duty in all the relations of life. It seems to arise necessarily from comparing one's self with other persons. If this be the right meaning of pride, it is very clear that it is not always a sentiment which entitles one to respect himself. A man would be thought to be very unwise who should openly declare that he valued himself, in comparison with other men, on account of his wealth, his beauty, or his family connection; equally unwise if he should declare his opinion of himself to be, that he was superior to other men in the gift of natural intellect, in the cultivation of it, or in the practice of the various virtues. The common

sense of mankind, founded in natural reason, does not approve of that self-gratulation which rests on the accident of birth, of inheritance, or even on the acquisition of fortune by one's own industry; nor does it approve of that feeling when founded on qualities which belong to the mind, nor even in the practice of his virtues, unless when manifested in a certain manner. There must be, in the very nature of things, some persons in every community, large or small, who are superior to others in these sources of self-esteem. In every city, town, and village in this nation, there are some persons who are in possession of some of these causes of self-esteem in some comparative degree, and other persons who have the fewest or the least of them. Those who so use their advantages as to entitle themselves to the esteem of others, and who are acknowledged to be respectable for that use, may well be entitled to respect themselves from such causes. Those who use them in such a manner as to announce the feeling of superiority over others, and habitually to offend the watchful feeling of self-love, are properly called *the proud*. It is believed that these views conform to natural law, and to the necessary constitution of human society.

VANITY.

A still greater mistake is made in substituting vanity for self-respect. The word vanity is made out of two Latin words which signify *exceeding emptiness*. It is commonly understood to mean a strong desire to be noticed, considered, and esteemed by others, but on account of things rarely worthy of a rational mind. Vain persons covet praise. They thrust themselves, and all on which they value themselves, upon the notice of others. They delight in recounting their achievements, and sometimes make the sad blunder of speaking to those who know they are mistaken. They touch adroitly on their own excellences, and provoke others to descant upon them. They have such delightful visions of self-complacency, that it seems cruel to disturb them. Such persons are very ready to become tools in the hands of more knowing persons. In general, the display of this poor passion is made by persons of very light and frivolous minds. It is seen at all ages, but strikingly in youth. To see a young person strutting or mincing along in a new garment, or in some personal ornament, and watching to see if he is noticed, and by whom, excites a feeling of pity and contempt. The same feeling arises when young persons are seen, who say in their movements, as intelligibly as though they spoke in plain English, 'Do they not think me very handsome—elegantly dressed—a charming figure—most exceedingly graceful?' In some instances lookers-on do think so, and smile contemptuously at the same time. But in general lookers-on see no such thing as the vain imagine; they do see that which it would be shocking to those votaries of vanity to know is seen. They do see talents wasted, time misspent, foolish hopes, and vain desires. They do see that the purposes of life are misunderstood or perverted. Is there any remedies for these follies? None, probably, unless one would bring home to the minds of the vain that they violate the strongest precept laid down in the code of natural law for the government of persons individually and socially. That precept commands them so to conduct themselves in all things, as to entitle themselves to self-respect, and consequently to the respect of others. If the vain could conceive how small a portion they make of created being, how insignificant a part they make of civilised society, how many there are in that society whose pretensions, if asserted, would be transcendently superior to their own, they might perhaps dismiss their little vanities, and devote themselves to gratifications worthy of their intended nature.

GRATITUDE AND INGRATITUDE.

If a destitute young person should attract the notice of a wealthy man, and should be by him supported, educated, and established in the world, so as to be able to live, to become independent and respectable, every one would say that this is a case for the feeling and the expression of fervent gratitude. Let us suppose that the patron of this young man frequently reminds him of his former condition, and by what means he finds himself where he is. Suppose the patron exacts a frequent acknowledgment of his bounty, and takes to himself unqualified praise for his goodness. Let us suppose that the obliged party finds his condition very irksome, and almost wishes that he had never been the subject of such burdensome favour, and is at length provoked to say so—*is he ungrateful?* It would seem, then, that gratitude has two sides to it, as well as two parties. He who has conferred a favour has not done all which it concerns him to do; and he who receives a favour may have a difficult task to perform. A bargain is an exchange of one thing for another, and the parties are even. The conferring of favours, whether these be asked for or not, seems to stand on very different grounds. Many elements make up that compound from which gratitude is said to arise. The parties may understand the nature of the favour very differently at the time when it is conferred, and more differently afterwards. He who confers, has a retentive memory; he who receives, a fading one: time engraves the deeper and deeper in the former, and wears it out more and more in the latter. In the former, it often preserves the freshness of a new occurrence; in the latter, the sense of favour often goes, and the weight of obligation alone remains. It may be that the complaints made against ungrateful persons are not always well-founded, and that the expectations of those who confer favours are as little so. Some poet has written—

> 'He that's ungrateful has an only fault—
> All other crimes may pass for virtues in him.'

The meaning of this couplet must be, that the members of society are under no obligations to confer favours, and that, if they do confer them, the party obliged is a monster if he do not—*what?* We know not what is intended, nor that there is any rule by which gratitude is to be manifested. We think that every member of society is to do what of good he can, and to whomsoever stands in need of it. He is not to stop to measure and calculate how he is to be paid for it. He may not be paid by the party benefited directly, but by some other, and in some other and unexpected way. Whosoever confers favours, opens an account with the changes, and chances, and accidents of life. His credit side will look well in the close. If he confer a favour, he does it because he thinks he can and ought to do it. He has the *pleasure* of doing it. If he wishes to avoid the affliction of ingratitude, he has only to avoid letting the party obliged know, unnecessarily, whence the benefit comes. When a favour is done, the party conferring it takes on himself the duty of respecting that feeling of the human heart which is founded in reasonable self-love, and which is entitled to respect—that is, *not to ask one who has had the misfortune to be bound in chains, to clank them for the gratification of him who put them on.* There are cases of extreme ingratitude. They may have been occasioned by the irritating or indiscreet conduct of the party who was entitled to a different return. They are not of common occurrence. When they do occur, uncaused, the disappointed party may hope to find a better subject in his next essay.

SLANDER.

This is a twofold crime: 1. It is a breach of natural law, of Divine law, and of the implied law of society, in relation to the party spoken of; 2. It is a breach of the same law in relation to the party speaking. It has been commonly treated of in the first relation. It is now to be noticed in the second; and if it be shown why it is a breach in this, the other will take care of itself. We beg leave to ask a slanderer a few questions: Do you desire to be esteemed in society for your intelligence, your sense of justice, your knowledge of the decencies of life, and for the observance of them? If you happen to be ill-tempered, petulant, and disagree-

able to your family connections and associates; if you make hasty and troublesome judgments, which you have to rescind or reform; if you happen to be ridiculous in your deportment, and remarkable for silly vanities; are you willing to have these things set forth in any, and every company, by any one who knows of them? Suppose there to be only some slight foundation for some one or more of these things, which, if you could have an opportunity to explain, would be entirely cleared up, are you willing to have that slight foundation made the basis of a structure of reproach, which, if true and real, ought to expel you from decent society? Suppose there to be no foundation at all for any such accusation of yourself, and yet somehow, and unaccountably, it is afloat and circulating, should you not think great injustice to be done to you? This is just what you do to others. You take away their good name, if they deserve to have one; you magnify their little faults and errors, and make them ridiculous or odious; you try them on indictments for serious crimes, on which they have no opportunity to defend themselves, and of which they are ignorant. Where did you get your information? What credit were they entitled to from whom you had it? Did you understand them as they meant to be understood? Where and how did your informants learn what they communicated? Were they thoughtless or malicious slanderers like yourself? How much have you added to their slanders by way of recommending and making yourself agreeable? Have you broken any law by this conduct? We take the liberty to answer for you.

You have broken every law which an honest and honourable man, and a rational individual, should respect. 1. You have made every person whom you have spoken to fear you and shun you. You have shown that you know not what the value of a good name is, and have forfeited your own, if you ever had any. You have shown that you are a stranger to self-respect; that you have probably every one of the faults, follies, and errors which you impute to others; and desire to bring them down to your own level. Thus you have broken that law which commands you to do no evil to yourself. 2. You have violated that principle of natural law which commands you to do no injustice to your fellow-men. You know not what opinions you may entertain of the party you have slandered if circumstances (as they may) should bring you into connection with him. You may find him to be, on a better knowledge of him, an amiable and worthy person. You may find all that you have said, and helped to circulate, utterly groundless. If he be one whom you occasionally meet, and even ask to partake of your hospitality, how can you meet him, and manifest towards him every sentiment of respect and esteem, when you have so spoken of him? One of two things must be true—either you *act a lie*, when you meet him in such a manner; or you *spoke a lie*, when you represented him as you did to others. 3. You have broken the law of God. To this law perhaps you are a stranger, and know not what wrong you have done. If so, the kindest thing that any one can do you is, to urge you to find out what it is, and to learn there the sentence of the slanderer.

It may be asked whether one is to be entirely silent at all times, and on all occasions, as to the character and conduct of others? Certainly not. There are many occasions for speaking of others, and for speaking the *truth* of them, whatever that may be. All the members of any community are interested in knowing the true character of each other. The knowledge that this character may be known is one of the most salutary correctives of erroneous conduct, and one of the strongest inducements to pursue that which is commendable. It is probably the case that the members of every community are pretty well understood by all who have an interest in knowing them. We know not of any law which holds it to be immoral *to speak the truth of any one from good motives, and for justifiable ends.* It is all-important that this principle should prevail in our country, where so much depends on public opinion. Surely one's arms are not to be folded, and his lips closed, when he sees one bent on mischief, public or private. It may be one of the highest moral duties to declare what motives are, and what they are aiming at, in many supposable cases. There can be no surer guide than the *motive* and the *end*. Inquiries are sometimes made, in matters of greater or less interest, concerning others, confidentially, and where the inquirer needs to be truly informed. The party inquired of has a right to be silent if he thinks he has good reason to be so; but if he answer, he is bound to state the truth. If he chose to speak, and wilfully conceal the truth, so that the inquirer is deceived, he subjects himself to the imputation of an intentional deceiver.

There may be also, and there frequently are, confidential discussions of character, especially concerning public men, and where perhaps there is no particular end in view. This does not seem to be wrong; such intercourse is not founded in malicious or unworthy motives: it is even sometimes instructive and philosophical. This perhaps is the extreme limit. In all other imaginable cases it is probably most consistent with one's own self-respect, and all truly respectable motives, to let other persons alone, and leave to them the care of their own characters.

PROFANITY.

Excepting the high crimes which are punishable by the public laws, there is no one so shocking as *profanity*, nor any one which there is so little inducement to commit. Profane swearing is of two kinds:—1. That in which the Deity is called on to do the pleasure of a sinning mortal; 2. That in which the Deity is called on to witness the truth of such a being's thoughtless or wicked declarations. This common practice can be accounted for chiefly on two grounds;—1. Pitiable ignorance; 2. Abominable wickedness. On the first ground, surely the profane swearer must be ignorant of the import of the terms which he uses? If he did understand his own words, he would be struck with horror. Surely if there be any escape for the profane from that condemnation which they imprecate on others, it must be, that mercy will be extended to them in compassion for their ignorance. On the other hand, if they are not ignorant, but do knowingly and wilfully so misuse the gift of an immortal mind, and that unquestionable proof of Divine power and goodness, *the ability to speak*, they cannot be subjects of moral instruction. They should be left, like the consumers of alcohol and tobacco, to shock and to warn others.

Swearing, which formerly pervaded every rank of society, is now to be chiefly found in a very low and uninstructed class: it is, in fact, a vulgar and proscribed mode of speech. Nevertheless it is still used occasionally by persons of no humble rank, especially by the young, though chiefly for the purpose of giving an emphasis to speech, or perhaps simply to give token of a redundancy of spirits, and a high state of excitement. To those who are guilty of it for these reasons, it is only necessary to point out that no well-informed person can be at the least loss, with the genuine words of the English language, to express all legitimate ideas and feelings, and that to use either profane or slang words is, at the very least, the indication of a degraded taste and an inferior understanding.

Does not one who is habitually profane necessarily entertain a low opinion of himself? Would any respectable merchant, or mechanic, or farmer receive into his service a youth whom he knew to be a profane swearer? Could any one who is known to be such find admission into any school, academy, seminary, or college? Would any respectable parent admit such a one to be a companion of his children, or a visitant in his family? Would not every reasoning person say that a youth who is so ignorant as not to know that swearing is a violation of natural and Divine law, must be ignorant enough not to know that there are many other laws for the proper government of society, and consequently that he is an unsafe person to be trusted? If the profanity be

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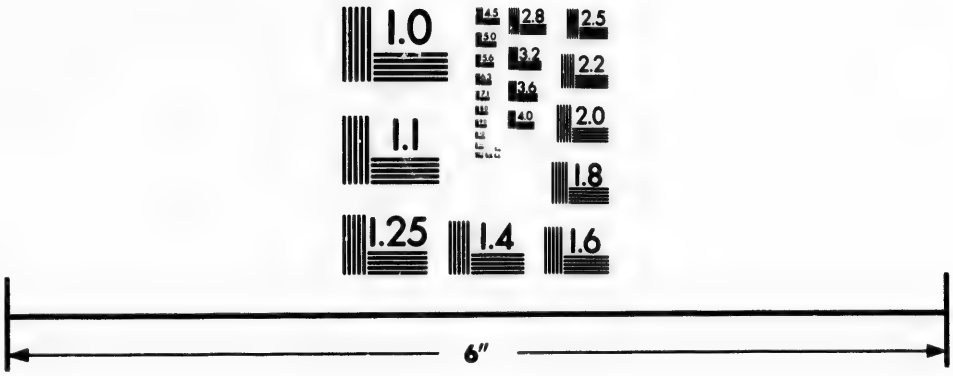

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the consequence of voluntary wickedness, then surely all reflecting persons would say that he who is wicked in this respect is indeed wicked; but then he will be wicked in others also. For as there is one chain which runs through all the virtues, and binds them in a sympathetic union, so also is there a chain which unites all the vices. He who swears may be justly suspected of drinking; he who swears and drinks may be justly suspected of gaming; he who swears, and drinks, and games, must keep very bad company by day and by night. He who keeps such company from such motives must squander his own property, or steal that of somebody else to expend. He who robs another will commit forgery, and he who is so desperate as to commit these two latter crimes will not hesitate long to put a human being out of the way of his pressing wants if he is tempted to do it. It is probable that habitual lying and swearing are the first steps in that mournful series of crimes, and the first beginnings in the course of deplorable wretchedness, which deform and disgrace human society. Will any one maintain that these are necessary evils, and that God has so made man that they cannot be prevented? Surely these are evils wholly of human origin; and where they begin, there also lies the power to extirpate them.

ENVY.

It is to be kept in view that the main object is to show that this is a good sort of existence if man knew how to use it, and that he is the author of his own afflictions. This is remarkably illustrated in the matter of *envy*. It is probable that a large proportion of mankind, in all classes, suffer from the dominion of this passion. It can be shown that it is peculiarly the passion which man has made for himself out of emulation, which latter is the Creator's work. In this instance, man has been exceedingly ingenious and successful in making himself miserable. He has done worse: he has provided for himself, in creating envy, a fountain which sends forth not one water, but many, and each one foul and poisonous. He who has submitted himself to envy has bound himself to think, to feel, and to act as envy prompts. It would be most shocking to know what agency this monster has had in human affairs. If any one should read history, and watch the movements of his fellow-men, merely to learn the operation of this principle of action, he would see probably the most operative cause of the misery which men inflict upon themselves and on each other. If one has not time to read history, and watch his fellow-men, he may perhaps learn much of what he would find in these authorities by *reading his own heart*.

Envy arises from perceiving in other persons qualities which one's own self-love leads him to wish to have—as beauty, strength, grace, learning, power, &c. It extends to riches, to office, to the respect and esteem in which one is held by his fellow-men, and even to birth and ancestry. It makes one *sorry* that he has not these good things, and makes him *angry* that others have them. One easily persuades himself that great injustice is done to him, in that *he* has them not. The next step is to *hate* him who has them. Then comes the desire to deprive the supposed fortunate possessor of the benefit of them. But to admit that one has these malignant promptings, is contrary to another principle of self-love; and therefore no man tells another of his own envy, and he tries to wrap it up from his own view. As he cannot and dare not openly manifest that he is envious, he must obey the suggestions of malice in the dark. He therefore intrigues, insinuates, and becomes adroit in putting one thing for another; he secretly and by covert means undermines the object of his hatred. He whispers his doubts, suspicions, opinions, and belief. If the tenure of the hated object is too strong to be shaken, then the bad use which he makes of his advantages are sought out. The base accompaniments of his fine qualities are assiduously brought forth, and placed in the strongest light. 'She is beautiful; *but* she is vain, haughty, and silly. He is rich; *but* he got his wealth by frauds, and hoards it like a miser. He is able, eloquent, and popular; *but* he is selfish and insincere, and would put a yoke on every neck in the country if he could. He is making a great flourish in the world; *but* it is all false and hollow—he came from nothing, and will go back to nothing.' It may be easily inferred that one who has thus surrendered himself to the dominion of envy, not only deprives himself of the profitable use of what he has or might have, but makes himself wretched in contemplating what he must know he cannot have: he is so wrought upon, that whatsoever seeds of crime he may have in his heart are sure to start into luxuriant and dangerous growth.

Can any rational being doubt that this sort of suffering and crime is entirely of man's making? Can it be doubted that he can prevent them? These are violations of natural law and Divine law; and no law comes from this source which cannot be understood and obeyed. Let us take an example, and seek out the unreasonableness and immorality of envy; and to do this effectually, we must take a strong case, and in some degree a fanciful one. Let us suppose that in a seminary of females there is one who is very beautiful; her parents are very rich, and are highly respectable; and that this young lady is distinguished by her genius, and her diligence and good conduct, and is obviously in the receipt of the preceptor's unqualified approbation. Let us further suppose that there are some of her schoolfellows who *envy* her. Their countenances show what they feel. Every mark of favour manifested to this fortunate person is a blow on every envious heart. Discontent, distress, and malignity take up their abodes in these hearts, and enter into thriving partnership. But the beauty, the genius, the diligence, the wealth, the parentage, the applause, are not among the dividends which these partners make: these remain where they were: and what dividends do they make? Let us suppose that the envious would do what they would—that is, annihilate the envied qualities, and make the possessor too low and contemptible to be more thought of; and let us suppose, too, that the successful adventurers succeed to what is now the first eminence—is there no one below to pull them down? They are soon down, and by like means; and thus the demolition would descend, until the seminary became too low a place for even envy to find something to live on.

Is not this a fair example of what we continually see in all grades and classes of social life? And is not this passion of envy earth-born, mischievous, and odious? What is the remedy? Common sense and plain reason point out the remedy. Generally speaking, every member in society is just as much in his own place as he is in his own skin. No one can be in another's place. Every one has his place originally assigned to him, and his natural condition in it, by means over which he had no control, and in making which he had no agency. What he will make out of himself, and of the circumstances in which he finds himself, must depend (after the irresponsible state of infancy is passed) on his own thoughts, motives, and acts. He will find his greatest good not in repining at the good of others (which he can never make to be his own, and which he cannot destroy without expecting retributive justice as to himself), but in making his own condition as good as he can, consistently with self-respect and peace of mind. That which is given to others, and all that they can lawfully acquire, is righteously their own. All that is given to one's self, and all that he so acquires, is in like manner his own. If he would have no injustice done to him by those who are below him, he must do no injustice to those who are above him.

EMULATION.

This has been sometimes classed with envy, but they have nothing in common. One would feel like a culprit in being known to be envious, but would rightly take praise to himself in being emulous. This motive to action was given to man for the best possible purposes; and upon the application of it, with justifiable views,

and to commendable ends, the advancement of human welfare mainly depends. We understand it to mean, the desire to obtain excellence in laudable pursuits. An envious man may be supposed to say, 'Your eminence distresses me; I cannot bear to see you sitting up there; and though I have not the shadow of hope that I can ascend to your place if you were out of it, nevertheless I must pull you down if I can, and then we shall stand on the same level.' An emulous man may be supposed to say, 'I admit that you are where you should be. You have raised yourself by fair and just means. I have no desire to disturb you, nor to impede your further progress. You have done me no injustice; on the contrary, you have rendered me the important service of showing me how one may honourably rise. I shall follow your example, and endeavour to place myself by your side. If I can get there, we shall have a fair, good-tempered rivalry, and we may animate and quicken each other's efforts. If you are able to keep always in advance of me, you will make me diligent, and enable me to excel others, if I cannot equal you.' There seems to be nothing immoral in this. In this view, emulation is presented in its true and amiable character. Like everything else intrusted to man's use, it may be, and often is, perverted. It frequently excites very unworthy feelings. Hence it has been confounded with envy. It is upon the principle of emulation that diligence in schools is commonly founded; and it is in schools that the perversion alluded to is frequently noticed. When several children are required to get and recite the same lesson, there must be a best and worst among them. That they are such respectively, may depend on natural talent, and upon industry, or on both. It deserves great consideration, whether rewards and punishments are generally understood in their true philosophy. There must be emulation in schools, because there is, and ought to be, that stimulant in all the vocations of life. If men had not the advantage of comparing themselves with each other, and the promptings to exertion which arise from that comparison, this life would be very still and stupid. But what use is to be made of this principle in schools? is a question of exceeding interest.

PEACE OF MIND.

It is believed that most persons pass a large portion of their lives in a state of inquietude and uneasiness. Persons who have no bodily disease are anxious and disturbed. They have some urgent want which cannot be gratified, or which cannot be so without incurring some evil which would be worse than the unsatisfied want. They have the dread of some probable or possible evil to come, and which is the more terrible because of the uncertainty of the manner and of the time in which it may come. Others are uneasy from remembering the past, in which some benefit was not secured, some blunder made, some wrong done to themselves, some vain gratification not obtained. There are many persons who are habitually discontented. They find everything goes wrong. The weather is bad; their food is not as they would have it; no one does anything in the right time or right manner; or that is done which should not be, or that is omitted which should be done. Such persons are always groaning, sighing, or grumbling. They dislike everybody, and everybody dislikes them; and particularly their abundant *advice* is disliked, and their manner of giving it. There are other persons who are of unquiet mind from more serious causes. They have recollections which distress or torment them. They are transgressors; perhaps criminally so. They have been able to conceal this, but they live in the fear of disclosure; at anyrate the fact cannot be hidden from themselves.

These are frightful instances of the agency of this companion which every man has in his own bosom. There are hours in every one's life when he must compare the condition in which he is with that in which he thinks he might have been. To some persons these are hours of dread and terror. It is believed that this cause of suffering is purely of human origin, and that prevention must be found where the error began. It is the law of the Deity that there shall be such suffering when the guilty mortal makes it necessary to apply that law. There are great differences in the temperament and natural dispositions of persons. It is incredible that the worst-tempered persons would not make a better whole of life, by suppressing their natural propensities, and acquiring a control over themselves, and teaching themselves to look out for what may be pleasant and agreeable (passing by that which seems ill to them), instead of doing exactly the reverse.

There are cases in life in which it is said there must be anxiety and inquietude, from the very condition in which men are placed: persons who sustain public offices, persons who are placed in important trusts, persons whose vocations are perilous, those who are pricked by the thorn of political ambition. It is probable that such persons do experience many painful and distressing emotions, and that they sometimes pay dearly for their distinction; but it is demonstrable that even such persons might have tranquillity if they had a right frame of mind. There are persons who substitute an aching solicitude for the reasonable discretion and care which is all that is required in the performance of duty. There are others who greatly overvalue the distinctions to which they attain or aspire; and very few of them reflect, that when they do succeed, they must take success, especially in popular governments, with the accompaniments of having their worthy acts often misunderstood and reproached, and their mistaken ones magnified and distorted, to suit the occasions of rivals and adversaries.

The remedy for this sort of suffering is within every one's power. Those who are poor, and in humble life, if not in extreme poverty, may possess peace of mind; and it is of easier acquisition by these than by those who are involved in the duties of office, and the responsibility of trust, and the embarrassment of wealth. Certainly, without this treasure, no earthly grandeur, no promise of posthumous glory, is worth having or seeking for. If the laws of nature and the teaching of revelation were properly known, respected, and obeyed, the common causes of inquietude would hardly be known. For example, what is more common than complaints of the weather? It is too hot or cold, wet or dry. It is not nature that mistakes about the weather, but ourselves. The movements of the winds and the waters, and the temperament of both, proceed on some great and universal laws far beyond human perception. That which is exacted of us to believe is, that it is so, and to adapt ourselves to it by our experience and ingenuity. What sort of effect would it produce in the earth if such things were regulated by human perception of what is best? When one has occasion to put to use a board or stick of timber which has been in contact with the ground for a certain length of time, he disturbs and puts to flight families, communities, and whole nations of living beings. Man may be much in the same relation as to general laws (not meant for him to comprehend) in which these insects are on the removal of their covering.

As to all causes of inquietude arising from the operation of nature's laws in which human agency has no concern, they must be right, although they occasion inconvenience to individuals. As to the acts and omissions of others which affect us, some questions are to be asked and answered before one can rightly judge of these; namely, What is the real cause of our complaint? Did not the first fault arise from some act or omission of our own? Do we judge reasonably of the supposed wrong? Do we make charitable allowance for the misapprehension which may affect the party complained of? When the inquietude arises from our own wayward and peevish disposition, from our own misconduct, negligence, or breach of laws, which we could know if we would, the remedy lies in becoming wiser and better, and more reasonable in learning how we may make of life that which it was intended to be,

when we use it as we should. Let any reasonable being look back on his own life, and calmly consider the causes of his own contentions, ill-will, failures, and sufferings in body and mind; how many of these can he fairly lay to the blame of the Creator's laws, of nature's laws, or those of society, whether positive or implied? If to these he can charge but very few, who then but himself is there to take blame for the residue?

We have been trying to show what peace of mind is not. We have to show what it is, or rather in what it is founded. It comes from sober conviction that the Creator has made His own laws for His own universe; that He requires conformity to these laws; that He permits and enjoins the use of what is good and right; that He punishes all that is wrong and disobedient. He has trusted every mortal with his own welfare, but has associated him with others who live in the same trust, each one for his own, but yet for mutual welfare. All are to contribute their common efforts to the common good. Those who have the means are to aid others in acquiring a knowledge of the laws which are common to all. If these laws were understood and applied, how abundantly would peace of mind increase in the world! The schoolboy would get his lessons and obey his preceptor; the labouring-classes would labour diligently, live temperately, and find a greater pleasure in their frugal food than the luxurious in their festivals; for the former live as nature orders, the latter as fashion dictates. The opulent and luxurious would learn that the accidents of their fortune do not exempt them from the laws of nature; that if they have affluence beyond their reasonable and commendable wants, they are blessed with the means of purchasing a precious name; they would learn that no wealth will exempt any man from earning an appetite for his pleasures by physical motion; that if he is tired of being rich and happy, *he must work* to accomplish some reasonable purpose. His distinction is, that he may choose the means in which he will expend *to be busy*, while others can only work in some prescribed mode *to live*.

The middle classes, and all who are not dependently poor, have as many and as valuable sources of enjoyment as those have whom they think to be better off than themselves. They can love and be loved; they can be respected and esteemed; they can have the consciousness of behaving well where their lot has been cast; they have a far keener zest for natural and reasonable pleasure than those who misuse the bounties of accidental condition; they can have peace of mind when it is denied to those whom they deem more fortunate. If these natural laws, which seem to be so plain and obvious, were understood and respected, the labourers *in mind*, in all their varied employments, would do diligently, and in the best manner in their power, that which they have undertaken. Men of public trust would do honestly, and with a single view to their trust, that which they have undertaken. Suppose it were all so, and yet troubles and disappointments come. This may be, and yet there would be peace of mind. If every one were assured that no act, no omission of his own, makes him suffer, that he has acted faithfully and honestly, and to the best of his ability, in the circumstances in which he was placed, he would be entitled to have, and by the law of immutable justice he would have, *peace of mind*.

HAPPINESS.

There is no word in our language more commonly used, nor any one less defined or less understood. It is sometimes taken to mean pleasurable sensations derived through the senses; sometimes it means a peculiar state of mind. It may be said that a pirate who has been brought to the most perfect penitence, and who is sensible that he has forfeited his life to the demands of justice, and that he is about to be transferred from the perplexities and sufferings of this state of being to endless felicity, is *happy* that he is going to be *hanged*. Perhaps it is easier to tell what happiness is not, than what it is. The most perfect *health* is not happiness, unless one has something to do. Health and *riches* do not make one happy. These accidents of being rather excite cravings for enjoyment. They are means, not ends. A rich man can ride but one horse, or sit but in one coach, or eat but one dinner, or live but in one house, at a time. Persons in moderate circumstances can do the same.

Health, riches, *power*, and *distinction*, do not make happiness. Distinction is troublesome: it has more pains than pleasures; it is jealous, envious, and distrustful. Power does not make one happy; it demands the most busy watchfulness to keep it. If lost, its absence is often followed by painful suffering, and the possession of it is always accompanied with the fear of losing it. Riches are sometimes regarded as means of enabling one to live in elegant luxury, and even in voluptuous enjoyment. This is no way to be happy; the appetites soon become satiated; the stomach wears out; the senses are palled; diseases come: the body may be racked on a velvet couch as well as on a straw-bed. Is there, then, any such thing as happiness? There must be such a thing, or the laws of nature, which provide for physical, intellectual, and moral being, are false and deceitful, and the gift of revelation is a fable. If there be such a thing as happiness, it will be found in that knowledge of, and obedience to, the laws of nature which make health. It will be found in obeying the propensity to action, to some continuous, useful end; that is, in pursuing reasonably some one of the many vocations in society which tend to secure one's own self-respect and peace of mind, and which tend also to the common good. But there may be disappointments, ill-luck, and causes of mortification and sorrow. These, we apprehend, do not seriously disturb any well-regulated mind, when there is a consciousness that no reasonable foresight or prudence would have discerned and prevented the cause. Perfect happiness in this world, it must ever be remembered, is not to be expected: the only happiness that we can really attain consists in a certain contented tranquillity of mind under all the shocks and changes of this mortal life. There is a point called the *happy medium;* and this should be an aim in all human arrangements. Be moderate in all things. For example, to take no amusement is bad, for it deprives the mind of needful rest and recreation; so likewise it is bad to be altogether given up to amusement, for then all serious objects are lost sight of. The true plan is to take amusement in moderation. Some minds [illegible] never awakened to a taste for poetry, fiction, the fi[illegible] arts, and music, and they thus lose much pleasu[illegible]ch others enjoy: again, there are some in whom [illegible]ure has implanted, and use cultivated, so strong a predilection for these things, that it becomes a vice. To be very much in society is sure to deteriorate the human character, making it frivolous, and incapacitating it for taking abstract and elevated views: on the other hand, a perfectly solitary life weakens the mind, lays it open to odd fancies and eccentricities, if not to hypochondria, and ends in some instances by altogether throwing it from its balance. The medium is here also found alone salutary. To be excessively gay, in a world where so many evils lurk around our every step, and so many onerous things call for our attention, is wrong: so is it to be always serious, seeing that the world also contains the materials of much happiness. What is proper is, that we should be ready to rejoice and mourn in moderation on the appropriate occasions. Finally, one may feel assured that if he abide by these moderate desires, and so use his time as to be reasonably busy to some good purpose, and so conduct himself as to be justly entitled to his own approbation, and if he live in the habitual assurance that there is an omnipresent, omniscient, and merciful Judge of moral, accountable, and immortal man, he will certainly be happy.

NOTE.—The matter of this sheet has been extracted, with a few alterations, from the Moral Class-Book of Mr William Sullivan, published several years ago at Boston, United States.

PUBLIC AND SOCIAL DUTIES OF LIFE.

The preceding article devoted to this subject embraced the duties which one owes to himself as a rational being. The present is not less important in its character, being intended to point out those duties which we are required to perform with respect to our various public and domestic relations. We begin with our

DUTIES AS SUBJECTS.

Every civilised nation is governed by some species of authority, for the purpose of preserving order in society. Some governments are good, others are bad; but it does not fall within our province to point out where the ruling authority is injurious, or where it is most advantageous to the people. According to a law of universal application, every independent nation is understood to have the undoubted right to model its government according to its own fancy, genius, or necessities, provided that, in the execution of its plans, it does not wantonly injure its neighbours. Directing our attention to our own country, with which we have here alone to do, we find, as soon as reason dawns upon us in youth, that we are members of a great and enlightened community. We find ourselves subject to laws which were framed long before we were born, and that we must act in a manner not to please our own caprice, but according to the arrangements which have been instituted for the benefit of society at large. But if we thus discover that we are trammelled by certain legal restrictions, not very agreeable perhaps to the wildness of our untamed nature, we likewise find that we possess a great many compensating privileges. While yet opening our eyes to the light, we enter into the enjoyment of all the transcendent privileges of British subjects, and come within the powerful protection of the laws as fully as the oldest and most honoured in the land. It will be perceived that this is a boon of incalculable value. For us armies have fought and bled; for us, in past times, hosts of martyrs and patriots have contended; for us the wisest statesmen and legislators have transacted negotiations securing civil liberty; for us the people who have gone before us have established a variety of the most excellent, the most beneficent institutions. All these things we enjoy without having been put to the smallest trouble. All that we are called on to give in return, as soon as emancipated from the inexperience and ignorance of childhood, is *obedience to the laws*.

A cheerful obedience to the laws is therefore our chief public duty. Possibly some of our laws, from having been framed for a former state of society, or in order to meet particular exigencies, may not now be very judicious in their provisions; yet that forms no solid reason why we should break through them. It is always safer to obey a bad law than to oppose it by violence. Unhappily for some nations, they seem to have no accurate idea of the value of obedience to the laws. When they find themselves aggrieved by oppressive state measures, they are exceedingly apt to break into tumults, and take up arms against the officers of their governments. This is a very shortsighted policy, as the history of all nations proves; for the people are always sure to suffer far more by the coercive measures adopted to restrain them, than they would have done by submitting to the evil they originally complained of. It is the boast and glory of Britain—and long may it be so—that its people know how to respect the laws, even while they consider them to be injurious, and how to correct them by quiet and orderly procedure. In this lies the important secret of their national greatness, their wealth, their public liberty. The advantages arising out of a scrupulous obedience to the laws, consist, in the first place, of social order and quietude, by which the rights of property are respected, commerce and trade permitted to flourish, and the sacred inviolability of the person preserved. The results of turbulence and civil commotion are—poverty, ruin to property, insecurity of the person, destruction of commerce and trade, and at length military oppression and barbarism. Every intelligent man, therefore, in this country yields not only a bare submission, but a becoming respect to the laws, as well as to the various institutions established by their authority.

Perfect obedience both to the letter and the spirit of the laws does not, however, imply that we should not examine whether they are in every respect answerable to the present condition of society, nor keep us from resorting to legal means to have them corrected, or altogether rescinded. The constitution points out how this is to be done. It is illegal to conspire secretly to overthrow the law. All measures calculated to improve our social condition must be conducted openly and honourably. The means put into our hands by the constitution for improving the law are very powerful, if wielded with discretion. The people have the appointment of the men who constitute the most influential branch of the legislature; if they do not appoint individuals who will meet their views with regard to correcting or abolishing laws, they have themselves to blame: the constitution confers upon them a liberty of choice. It besides gives them the right to present petitions to the legislature, either individually, or in bodies, praying in respectful terms for the amendment or abolition of any law which is deemed oppressive or antiquated. This right gives a vast addition to the power of the people. It is of much greater value than one would at first be inclined to suppose, and is infinitely preferable to the use of violence. The right of petition implies the right of meeting publicly to discuss the propriety of petitioning. This practice of meeting together excites the public mind to renewed efforts in the cause it undertakes. The speeches of the orators are circulated and commented upon by the newspapers all over the country. One meeting gives rise to others, men's minds are enlightened and warmed, and the public opinion acquires by degrees an amount of moral force, any resistance to which would be useless. It is not without reason, therefore, that the people of this country set so high a value on the right to assemble for the discussion of public affairs, and place it in the first rank of their constitutional prerogatives.

Besides yielding obedience to the existing laws, we are under a collateral obligation to be loyal to the sovereign who rules over us. Loyalty is hence another of our chief public duties. There is some difference of opinion with regard to what extent loyalty ought to be carried. It appears to us that this is a simple matter. A power to protect the nation from foreign insult, and to preserve the internal peace of the country, *must be lodged somewhere*. It is found to be most convenient to lodge it in the hands of one person, under proper restrictions. In Great Britain, as will be seen in our history of the constitution of that country (No. 62), it has been placed in the possession of a hereditary prince or king. This person is entitled our ruler or sovereign; we are termed his subjects. Loyalty signifies a fidelity and willingness in serving the king, so that he may be enabled both to protect the nation from outward harm, and to preserve order in society, through the agency of the laws, or, failing them, through the application of force. Seeing that the sovereign is prevented by the constitution from infringing upon the rights of the subject, through the exercise of his power, it is discovered that loyalty is rewarded in the comfort we enjoy; or, to use another expression, self-interest alone, if no nobler sentiment interfere, would lead us to afford

assistance to the king in the execution of his high and important trust. This assistance is demonstrated not only by personal service, if necessary, but by respect. Loyalty may be greatly enhanced by esteem for the private virtues and conduct of the sovereign. When so influenced, it is certainly both an amiable and commendable feeling, and can never, but in ill-regulated minds, degenerate into servile prostration.

In the United States of America, in which the executive is lodged in an elective president, the people call themselves citizens, not subjects; and what we mean by loyalty to the sovereign, they term duty to the commonwealth. It is obvious that there is extremely little essential difference *practically* between these phrases, whatever there may be in *feeling*. The subjects of Great Britain are as free as any people in the civilised world; much freer, indeed, than the inhabitants of France, who disclaim the appellation of *subjects*. These explanations are perhaps useful in admonishing us to beware how we vex ourselves about mere words and sounds. Our duty clearly consists in appreciating the numerous blessings we enjoy in our public and private relations, by whatever name these relations may be called. We are each individually fractional parts of a great nation, whose honour we are called on to sustain through good and bad report. Let us remember that individual virtue can alone promote social happiness, and that social happiness and peace form the basis of political independence. No man can be a good and respectable subject or citizen who is a bad son, a bad husband, a bad father, or a bad master. The nation is but a composition of a great many families, knit together by kindred sentiments and mutual wants; and how can it be great, or worthy of esteem, if its component parts exhibit in their constitution the worst of vices?

Loyalty to the sovereign leads to a subordinate, but important duty. It induces us to respect inferior constituted authorities. All judges, magistrates, or other civil functionaries stand in the light of representatives of the sovereign. The king cannot be everywhere at once, and he deputes these individuals to attend to the wants of his subjects, and to keep good order in society. To show contempt for any court of justice, or for any magistrate, is therefore equivalent to showing contempt for the king himself, as well as for the laws, and is justly punishable. To show our respect both for the laws and the sovereign, we must respect the decisions of judges and magistrates, and support their due execution by our personal influence. Nevertheless it is in every one's power, when they feel themselves aggrieved by these decisions, to appeal to higher authorities for redress; such being the only means allowable by the constitution in opposing the legal power of the established courts of civil and criminal jurisprudence.

A becoming obedience to the laws, and a generous respect for the supreme and inferior-constituted authorities, produces the agreeable result of good order and peace in society. Every one is not acquainted with the different ramifications of the common and statute law; indeed it would be impossible for us to acquire a correct knowledge of these things unless we devoted a lifetime to the study. This difficulty in acquiring a knowledge of the laws has sometimes given rise to a low sort of jeering at our excellent constitution, and it has been represented as cruel to compel an obedience to laws which few can have an opportunity of learning. But this is a fallacy into which we hope our young readers will not fall. The administration of the common law, such as that which applies to inheritance, debtor and creditor, and civil rights generally, rests with a body of educated men, or lawyers, whose services may at all times be commanded. Besides, we may, if we please, purchase digests of these laws for our private amusement and instruction. The other description of law which is made applicable to the preservation of the peace of society, any one can understand, if he have the ability to know right from wrong. We surely all know that it is illegal and criminal to steal, to rob, to murder, to break into our neighbours' houses, or to attack their persons by violence. It can require no reading of acts of Parliament to understand this. Common sense here serves us instead of legal knowledge.* Our duty in this matter is very easily defined. We must ever bear in mind that one of the principal acts of duty which the constitution enforces, is the abstaining from meddling violently with the persons and property of our fellow-subjects. In this well-regulated realm, the person of every man, woman, and child is inviolable from private attack. It is a crime almost punishable with the highest penalty of the law to strike any one, either from an idea that they have injured us, or through the influence of passion and prejudice. If we consider that we have been injured, we must apply to the law or the magisterial authorities for redress. We are only permitted to use physical force when in absolute danger of losing our lives or property by violence, there being then no time to apply to the law for protection. It would be gratifying if these regulations were more generally attended to than they seem to be. There are many young men who, from what they are pleased to term a love of fun, but which can be no other sentiment than a love of mischief, or gross ignorance, assail the persons of individuals of both sexes, to their great discomfort, and sometimes serious injury. Now it is clearly illegal to do so, and is generally punished by the infliction of severe penalties by the civil magistrate, though seldom marked with that ignominy which it deserves. Inasmuch as it is held that ignorance of the law does not excuse its infraction, so is it reckoned an invalid apology for the commission of crime to say that you were under the influence of intoxication at the time. Drunkenness is very properly esteemed an aggravation, not a palliation, of the offence.

CONDUCT AT PUBLIC MEETINGS.

The right of meeting together publicly to discuss matters connected with our social condition, being so invaluable a prerogative, it is right and fitting that all young men entering into the busy scenes of life should make themselves well acquainted with the rules which have been established by general consent for the proper conducting of such assemblages.

According to usage, a public meeting is not constituted until a person be appointed to preside, or to 'take the chair.' Without this ceremony, the meeting is a tumultuary assembly, or a mob. The first movement is therefore the appointment of a chairman. This functionary, on taking his seat, is for the time supreme in the meeting. His chief duty is the preservation of order. He allows only one to speak at a time, giving the preference to him who has first caught his eye in the act of rising, and giving every speaker a fair hearing. Another of his chief duties is the preventing of speakers from wandering from the subject under discussion; and if they do, he must remind them to keep to the point. In the execution of these and other duties he claims the support of the meeting, and all are bound to yield to his reasonable dictates, and help to maintain his authority. In proportion to the firmness, yet mildness of manner, of the chairman, so is the meeting likely to be well or ill-conducted.

At some public meetings there is no set plan of operations, and a general discussion on the subjects which are brought forward takes place; but at all meetings for specific important objects, there is a previous arrangement among a certain number of individuals to bring forward particular points to be spoken upon. In this case speakers are prepared, and the business assumes the form of the proposal and carrying of a set of resolutions or motions. The following is the routine of procedure:—The chairman having stated the object for which the meeting has been called, an individual

* At the same time we willingly allow that there is room for great improvement in the dissemination of a knowledge of the statute law, particularly that of a recent date. It is likely that some plan will soon be carried into execution to render the acquirement of such knowledge more speedy and certain.

steps forward and proposes a resolution for the adoption of the meeting. Whether he enforces the propriety of carrying such a resolution by a speech on its merits, or simply propounds the matter, he must be *seconded* by another individual (with or without a speech), otherwise the meeting cannot entertain his resolution for a moment. If duly seconded, then the motion is fairly tabled. It is before the meeting. After a resolution is proposed and seconded, it is the duty of the chairman to ask the meeting if it be carried or not; if agreed to by a general acclamation, or by an obvious majority, he pronounces the word 'carried,' which settles the point, and the business proceeds by the bringing forward of the other resolutions in the same manner. It is unusual for any member of a meeting to oppose the passing of a resolution, unless he have a better to offer in its stead. If he have, and if he wishes 'to take the sense of the meeting' on the subject, he has a right to be heard. Yet this can only be permitted, provided the meeting has been called in general terms. For instance, if the inhabitants of a town or district generally be called, in order to *consider* of the propriety of such and such measures, in that case every one is entitled to give his opinion, and to oppose the formal resolutions brought forward. But if the meeting be described by advertisement to consist of those inhabitants or others only who agree in the propriety of such and such measures, then no one is entitled to intrude himself on the deliberations who professes opinions contrary to the spirit and end of the meeting. An inattention to this exceedingly delicate point often creates serious heartburnings and disturbances; and on that account, committees who call public meetings ought to be very particular in the terms of their announcements.

As much regularity is necessary in respect of opposition to motions as in their proposal and carrying. The counter-motion of an opponent is called an amendment, which, to be available, must also be seconded. If not seconded, it drops; but the opposer may place his protest on record; that is to say, if the discussion be in a corporation, or other meeting where books of the minutes or transactions are kept. On being seconded, and discussed by those who wish to speak upon the subject, the matter is brought to the vote by the chairman, but not until both the mover and amender have replied, if they please to do so. After they have spoken, not another word can be uttered, and the vote is taken, a majority carrying. If the votes be equal in number, the casting-vote of the chairman carries. There is another way of suppressing a resolution, which is by 'moving the previous question.' This signifies, to return to the point at which the business of the meeting stood previous to the tabling of the motion; or means, in other words, to do nothing on the subject. But this must also be seconded, and put to the vote in opposition either to the motion or amendment, or to both. The routine is generally to place it in opposition to both; if carried, the matter is settled; if not carried, the order is next to place the motion and amendment against each other, and to take the vote.

Such is an outline of the mode of procedure at public meetings, and it is particularly desirable that attention should be shown to the preservation of regularity. At all public meetings there is a strong tendency 'to go out of order.' By this expression it is meant that speakers are under a constant liability to wander from the point under discussion. They are apt to digress into other subjects, and confuse their auditors; and these, getting impatient, are equally apt to interrupt them, so that a single irrelevant observation may frequently lead to hours of idle debate or colloquy, or 'speaking to order,' as it is termed, and thus the harmony of the assembly be destroyed. Those who attend such meetings should therefore have a regard for the following regulations:—If they speak, they should keep closely to the subject in hand. If they be listeners, they should preserve a strict silence. It is ungentlemanly, not to say disorderly, to utter any sound or make any observation on what a speaker is saying. The speaker must on no account be interrupted, so long as he keeps to order; and if not in order, it is the chairman's duty to check him. It is likewise disorderly to speak more than once, except in replying before the vote is put, or except it be the rule of the assembly to permit it. Sometimes persons who have spoken rise again to speak as to 'a matter of form.' This is allowable; but in speaking as to form, the merits of the case should not be introduced. On this, however, as on every other point, there is a perpetual tendency to go out of order; hence the absolute necessity for appointing a chairman well acquainted with the forms of public deliberation, courteous, yet impartial, and who has the strength of mind to insist on order being preserved.

At all our public assemblages a certain degree of courtesy is used both among speakers and listeners. On an individual rising to speak, he addresses himself politely to the chairman, and the chairman in return politely mentions the name of the speaker, by which means the audience is made acquainted with the gentleman who is about to address them. When the discussions of the meeting are over, the chairman closes the business with a few observations, and then dissolves the assembly by leaving the chair. When any dispute arises in the course of the business of the meeting upon points of form, it is customary to appeal to the usages of the House of Commons for an example to be followed.

DUTIES AS ELECTORS.

There are duties of another nature which we may be called on to perform in our character of citizens. We are invested with the high and solemn trust of electing our representatives in Parliament, as well as representatives in our municipal institutions. In the execution of our duty as electors, we are bound to divest ourselves of all factious or personal considerations. We have certainly to consult our own good in making a choice of a representative, but it is only as flowing from the good of the whole community. We must hence act entirely without passion or prejudice. Let us examine the previous habits of life, public conduct, and avowed sentiments of candidates, and calmly consider whether they are such as we can approve of, or as being consistent with the general welfare of the people. We should also recollect that we exercise the trust of electors for many who do not possess that privilege. A large proportion of the community consists of women and children, persons in a humble condition, the sick, and the helpless. These look to us for protection from wrong, and it is our duty to afford it to them. If we therefore act with levity and imprudence in appointing men who, from their conduct and character, are unfitted to exercise the important function of public representatives, we in more ways than one commit a crime against society, and prove ourselves unworthy of possessing the valuable prerogatives with which we have been invested by the constitution.

In our capacity as citizens we are frequently called upon to elect representatives in different municipal bodies; such as civic managers of the city in which we reside, managers of local trusts—general, political, and religious. There is often much heat at such elections; a petty factious spirit frequently governs the choice which is made: sometimes the meanest passions of our nature are exhibited during the contest. The observations we have made on our duties as electors generally, apply here with peculiar force. As those who present themselves as candidates live amongst us, we can never find any difficulty in estimating their character and qualifications. But we must take care not to be borne away by private feelings; we must not give our vote simply because the candidate is an acquaintance. A consideration for *what is best for the public interest* should in every case govern us; and we should not be afraid to let these our sentiments be known, for they can give no honourable man offence. But even after we have made choice of the individual whom we intend to support, from a conscientious conviction that his election would prove beneficial to the whole community,

we ought not unduly to influence the suffrages of others. They may be convinced that another candidate possesses higher qualifications for, and a superior claim to, the office; and it should never be lost sight of that their opinion is entitled to equal respect with our own. We ought not, therefore, by intimidation, or by the exercise of any undue influence, which, from our position in society, we may possess over others, to coerce them into the support of an individual to whom they may be conscientiously opposed. Were this rule to be universally adopted, there would be an end of those disgusting exhibitions by which too many election contests are disgraced. We may, indeed, legitimately endeavour to convince our fellow-electors of the erroneousness of their opinion, but we have no right to ask them to act in opposition to it.

In all cases of election of members of civic corporations, and such-like bodies, the chief merit in candidates, after that of good and respectable character, is soundness of judgment, and after that, activity of habits. The power of fine speaking, or eloquence, is not required in such a functionary, and should be esteemed very lightly. That which is required is a power of thinking coolly, an integrity of purpose, and a willingness and ability in taking a share of the burdensome duties to be performed. Our qualifications as electors perhaps render us liable to be ourselves elected. In the event, therefore, of being called forward by our fellow-citizens to fill the honourable situation of their representative, it is our duty to sacrifice perhaps our own feelings and a portion of our time in the public service, provided we conscientiously consider ourselves qualified for the task, and that our health and private circumstances permit it. The principal question we have to put to ourselves, when we are so brought forward, is, 'Have we sufficient time to spare to attend the various meetings—to sit and deliberate in the numerous committees—to have our minds frequently occupied with public affairs?' If we deceive ourselves in answering this important question, we wrong society, and give ourselves cause for much after disquietude. Is it, or not, the proper way for every one who is worthy of this trust, calmly, deliberately, and to the best of his knowledge and belief, to do those acts which will best preserve for his own use the beautiful fabric of our political institutions? If he perceives and rejoices in the good which he and others derive from it, will he not best perform his duties to those who come after him, to use it, and not abuse it, that they may have the like good? Little suggestions of selfishness, rivalry, and petty local interests, and, most of all, perverted and mischievous ambition, are the blocks over which citizens are apt to stumble and fall, in the otherwise luminous and clear path in which they are permitted to move.

DUTIES AS JURORS.

The laws under which we live give us the invaluable privilege of trial by jury; in other words, we are tried for the commission of offences by a body of men chosen indiscriminately, as nearly as convenient, from the class of society in which we have moved. By such a considerate regulation there can be little risk of individual oppression, provided those who compose juries do their duty. It is therefore incumbent on citizens who are liable to serve in juries, to make themselves acquainted with what is understood to be their duty when so called upon. It requires no learning to fulfil the character of a juror. It requires no more than a coolness of thinking, and a mind above being carried away by prejudices or feelings. The juror is to remember that it is the jury which is the judge in the case, not the judges who sit on the bench. Keeping this in view, it is one of the chief qualities requisite in a jury to maintain its proper dignity and honour inviolate, nevertheless with all courtesy, and to act with firmness in the execution of its important function. Besides deliberating dispassionately on the evidence presented, it is the duty of the juror to be totally regardless of every consideration but that of justice. He is neither to regard the rank of the culprit nor of the injured party. In a court of jurisprudence all men sink to an equality. It is also the duty of the juror, after forming his conscientious opinion, not to be coerced, or flattered, or spoken into a different opinion. He is invested with a solemn trust, and that trust he must preserve with scrupulous care, as consonant with the best interests of society.

DUTIES AS NEIGHBOURS.

Besides the duties which we have to perform as members of a great nation, we have duties of a similar nature to perform as inhabitants of a town, district, or neighbourhood, and in relation to which we sometimes receive the appellation of citizens. Every person belongs to a neighbourhood, which is both local and social. Even those who have removed into new countries, and who dwell in solitary abodes, do not lose the sentiment of neighbourhood. The nearest person to them is a neighbour, though separated by long distance. And when this sentiment cannot be preserved in fact, it may be in thought, and by that means it usually is so. Perhaps the last impressions that leave the heart of one who has wandered into far distant regions, are those made in his early days, in his native home. In general, as every one lives in a neighbourhood more or less dense, he can promote his own happiness, and that of those around him, by observing a becoming moral conduct. He has a right to enjoy life, and to use all things which he has, to that end; but he has not a right to any enjoyment which necessarily disturbs that of others. Peace, tranquillity, and security within one's own walls, is the main purpose of life. No one has a right to interfere in these things but by order of the public law. A neighbour, therefore, who so conducts himself, and those means of pleasure which he commands, as to vex, harass, and disturb those who are necessarily within sight, hearing, &c. commits an offence against morality. It often happens to be the pleasure of one who dwells in a dense neighbourhood to keep one or more animals, whose habitual noises disturb those who necessarily dwell within hearing, in the hours allotted to repose, and frequently when persons are visited by sickness, and when any noise is distressing. Now, whatever the rigid law of the land may say in such cases, the law of morality says that the suffering party has an unquestionable right to remove his trouble, if the proprietor of the cause of such nuisance will not, on request, remove it himself. A more peaceable way would be, to have it removed by order of the public magistrate. Many of such petty nuisances ought to be removable on summary verbal application to the proper authorities, and not in the slow, written, and printed process in which the movements of ordinary law are commonly made.

The moral duties of neighbourhood extend to all things which minister to the common comfort, convenience, and security. Each one of a neighbourhood is bound to make his own dwelling-place as agreeable and pleasant to those around him as he reasonably can. Each one is morally held to uphold and sustain a good name for his own little community. He is therefore to join, with a liberal and manly feeling, in all the improvements which tend to please and adorn. Such things, even if they occasion some expenditure, are sources of self-satisfaction; and one comes at last to take an honourable pride in hearing his street, his village, his town or city, commended by observers.

There is another sort of neighbourhood which is founded in social intercourse, and in the interchange of visiting and hospitality. As the world now is, this is commonly regulated by artificial and somewhat unnatural rules. It is often ostentatious, luxurious, and destitute of all feelings and thoughts in which well-trained moral minds can take pleasure. A profuse and voluptuous entertainment, comprising food little adapted to promote health and vigour, and in quantity sufficient for ten times the number, that rather look at than consume it, is an unsatisfying way of being happy in social

intercourse. There are modes of maintaining such intercourse, which are innocent, pleasing, and dutiful. Mankind are fitted for such. The interchange of friendly visits, for conversation, music, and rational amusement, with such things as may be used without suffering, or impairing health, is that kind of neighbourhood (in such relations) which is permitted and enjoined. We have, however, little reason to think that intimacies of this sort are likely to meet with such consideration as would induce the further extension of them.

Every person, in general, is a member of some kind of society or association. Some persons belong to many. These are intended for some useful purpose. Every one who is such member has some duties to perform. He owes some proper part of his time, some proper contributions, to the common object, and has an interest in the prosperity of the design. All these institutions do some good, and some of them eminent good, in helping on the great purpose of social life, which is general improvement. Of this nature are public charities, educational institutions, libraries, agricultural societies, and those for suppressing intemperance and immorality. No well-disposed citizen can conscientiously abstain from giving his aid and support to such objects. It is each one's duty to try to leave the world a little better than he found it. No one can say these are matters which do not concern him. Suppose every one should say so, and had said so from the beginning, society would still be made up of barbarians. Every good that is done in any community affects, directly or indirectly, every member of it. The law of example, of imitation, of doing as others do, has a most pervading and astonishing influence. Every community may be likened to a vessel full of water; no one drop in it can be moved without affecting every other drop.

DUTIES IN OUR DOMESTIC RELATIONS.

Marriage.—This institution is agreeable to a law of nature, and is an ordinance of the Creator. There are profligates who have doubted this; but they have exhibited no reason on their side. It is obvious that man is not only a gregarious, but a pairing animal. Marriage is consistent with the finest of his feelings—the most noble of his faculties. It began when man began. It is ordered to perpetuate the succession of the human family. It is ordered for the whole duration of adult age. It is man's peculiar privilege in this; it connects him with generations which are gone, with that which is passing away, and with those which are to come. The memory and the ashes of the dead are precious to him, and no other animal has that sentiment. He alone contemplates that his own memory will be held in honour, and that the place of his earthly quiet will be sacred. He only is enabled to conceive that moral and physical wrong will bear his own stamp in the character and in the frame of those that follow him; he only knows that a good name may be an honourable inheritance. These are the sentiments which spring from the beneficent gift of marriage. However much one may misunderstand or abuse this gift, nature, ever faithful to her trust, forces these sentiments on the heart.

Marriage is recognised as a contract of a binding nature in all civilised nations. By some it is considered, from its solemnity, to be of a sacred character; by others it is deemed only a civil bond of connection. All, however, agree in holding it to be an irrevocable contract. The laws of the land, those of nature, and the Divine law, disclose the sentiments, the feelings, and the awful sense of duty with which this undertaking should be regarded. Yet it is frequently entered into from motives highly reprehensible, and sometimes with shocking thoughtlessness. It is from such causes that we too frequently see this sacred union, which should be the true source of the highest human happiness, become that inexhaustible fountain from which both parties are daily and hourly compelled to drink, and from the same cup, the bitterest waters.

In a great number of instances, marriage is contracted with exceedingly little regard to the qualities of the mind on either side, particularly on the side of the man. If one could penetrate the ear of an enamoured youth, some good might come from such suggestions as these:—Do you know what will come of that engagement which you are about to make? Are you about to tie yourself by bands, absolutely indissoluble while you live, to a mortal who has feelings, wishes, wants, hopes, and fears, which must become yours, and a part of your very self; or which you must resist, control, or contend with? Do you know that pain, suffering, and sorrow, originating in either, must be borne by both? Are you aware that whatsoever of error, folly, or crime, may be chargeable to either of you, or to any who may spring from your contract, will be your common burthen and shame; and that from these you can relieve yourself nowhere but in the grave? Or, do you know that this attractive being will be your kind friend; your counsellor; the welcome soother of your cares and anxieties; the generous and charitable judge of your infirmities; the inspirer of honourable ambition; your fellow-labourer in joint interests; the ornament of your life; the gracious, considerate, faithful, gentle companion, who will make your own virtuous home the place to which you refer all earthly happiness? Who, it may be asked, that is 'in love' has leisure or inclination to think of such *trifles* as these?

There is no reason why the passion of love should be wrapped up in mystery, nor any why the mind should be stained in considering its nature. It would prevent much and complicated misery in the world if all young persons understood it truly. There are in every human being seeds, each one of which may be made to germinate, and may be so cultivated as to produce the most odious vices, or the most serene and heavenly virtues. There is in every human heart a fund of kindness, tenderness, and affection, which makes itself known to be there in due time. It demands to be applied. This is the trying and perilous moment in youthful life. There is some one, somewhere, who will take that fund, and give back its full equivalent. The external senses and the heart are in search of that one. Happy will it be for the searcher if he will take reason as a monitor to keep the senses and heart in order. But reason is commonly regarded not as a kind and faithful friend, whose duty it is to whisper, 'Begin nothing of which you have not well considered the end,' but as a withered scowling matron, who, being utterly dead to the impulses of youth, denies that there ought to be any. If there has been no preparation for this eventful period; if the mind has not been enriched with the teachings of rational prudence; if the eye has not been taught to distinguish between the real and the fictitious; if the ear has not learned to discriminate the meaning of sounds; if life as a whole, if the consequences of irrevocable deeds be not thought of, there is peril; and the pure drop from the fountain may flow into any sea but that of happiness. In seeking for that being who is to be a companion during life, one grievous failing must be avoided. Young men frequently amuse themselves by playing with the feelings of young women. They visit them often, they walk with them, they pay them divers attentions, and after giving them an idea that they are attached to them, they either leave them, or, what is worse, never come to an explanation of their sentiments. This is to act the character of a *dangler*, a character truly infamous. Young men cannot, indeed, be too cautious in the attentions which they bestow on unmarried females, who on their part should be equally guarded in not encouraging the addresses of any individuals whom they would not choose to marry.

According to the present state of society, one of the influential counteracting elements to marriage is, or ought to be, a high degree of prudence. No one ought to marry who cannot foresee that he will be able to support the additional expenses of a wife and family, and at the same time fulfil his other necessary obligations. By good management, these additional charges are not great, but they amount to something, and he is worse

than an infidel who does not provide against them. We are of belief that every industrious, active, and sober man will find no serious obstacle in this respect. It is from idleness, love of company, and intemperance, not from simple expenditure on family necessaries and comforts, that ruin and poverty in the married life are produced. The dread of encountering the expenses of a family, though acting as a salutary check on imprudent marriages, is frequently productive of many gross vices, tending to the injury both of individuals and of society. Celibacy, especially when circumstances would permit marriage, is not respectable; it is considered akin to vagrancy. He who marries and settles down as a householder, meets with the approbation of the world. Why is this? it may be asked. Because in marrying we give a guarantee to society for our good behaviour. It is not to be doubted that a young, well-educated, industrious couple, who are sincerely and affectionately attached, on a sober examination and conviction of each other's worth and suitability to each other, may be happy with means far short of the fashionable standard. Presuming that such a couple are wise enough to take life for the real and substantial good that it can produce—and as a whole, it would do them great injustice to suppose that they could not find that good in a small, simple, cheerful, tranquil mansion—it would be doing the friends of such a couple the like injustice to suppose that they could not visit them, and be satisfied to see them happy through such means.

According to the usages of society, it is the custom for the man to propose marriage, and for the female to refuse or accept the offer. There ought to be a perfect freedom of the will in both parties. To impose any species of constraint on either party is most mischievous; it would be a gross violation of our most sacred privileges. Both parties, therefore, ought freely to think for themselves, however much they may seek the advice of those who are inclined to afford them counsel.

In treating of this subject, it may be of service to offer a few special advices to young women. Our first recommendation is, that they ought to be in no haste to accept a lover. Let them know him a sufficient time to judge of his qualities of mind, temper, habits, &c. before they allow themselves to be inveigled into a marriage with him. Far better for them to remain single, than heedlessly incur the risk of being miserable during the remainder of their lives. In general, young women are much too anxious to involve themselves in this respect. The following observations on the injurious effects of making marriage the sole object of a young woman's thoughts, occur in a popular work by Mrs Farrar, and are well worth attention:—

'Some one has said, that "matrimony is with women the great business of life, whereas with men it is only an incident"—an important one, to be sure, but only one among many to which their attention is directed, and often kept entirely out of view during several years of their early life. Now this difference gives the other sex a great advantage over you; and the best way to equalise your lot, and become as wise as they are, is to think as little about it as they do.

The less your mind dwells upon lovers and matrimony, the more agreeable and profitable will be your intercourse with gentlemen. If you regard men as intellectual beings, who have access to certain sources of knowledge of which you are deprived, and seek to derive all the benefit you can from their peculiar attainments and experience—if you talk to them as one rational being should with another, and never remind them that you are candidates for matrimony—you will enjoy far more than you can by regarding them under that one aspect of possible future admirers and lovers. When that is the ruling and absorbing thought, you have not the proper use of your faculties; your manners are constrained and awkward, you are easily embarrassed, and made to say what is ill-judged, silly, and out of place; and you defeat your own views by appearing to a great disadvantage.

However secret you may be in these speculations, if you are continually thinking of them, and attaching undue importance to the acquaintance of gentlemen, it will most certainly show itself in your manners and conversation, and will betray a weakness that is held in especial contempt by the stronger sex.

Since the customs of society have awarded to man the privilege of making the first advance towards matrimony, it is the safest way for woman to leave the matter entirely in his hands. She should be so educated as to consider that the great end of existence—preparation for eternity—may be equally attained in married or single life, and that no union but the most perfect one is at all desirable. Matrimony should be considered as an incident in life, which, if it come at all, must come without any contrivance of yours; and therefore you may safely put aside all thoughts of it till some one forces the subject upon your notice by professions of a particular interest in you.

Lively, ingenuous, conversable, and charming little girls, are often spoiled into dull, bashful, silent young ladies, and all because their heads are full of nonsense about beaux and lovers. They have a thousand thoughts and feelings which they would be ashamed to confess, though not ashamed to entertain; and their preoccupation with a subject which they had better let entirely alone, prevents their being the agreeable and rational companions of the gentlemen of their acquaintance which they were designed to be.

Girls get into all sorts of scrapes by this undue preoccupation of mind; they misconstrue the commonest attentions into marks of particular regard, and thus nourish a fancy for a person who has never once thought of them but as an agreeable acquaintance. They lose the enjoyment of a party if certain beaux are not there whom they expected to meet; they become jealous of their best friends if the beaux are there, and do not talk to them as much as they wish; every trifle is magnified into something of importance—a fruitful source of misery—and things of real importance are neglected for chimeras. And all this gratuitous painstaking defeats its own ends! The labour is all in vain; such girls are not the most popular; and those who seem never to have thought about matrimony at all, are sought and preferred before them.' We may add the advice, that young women should not consider it a serious misfortune even if never married: there is nothing disreputable, while there may be much happiness, in the condition of an old maid.

HUSBAND AND WIFE.

Marriage having at length taken place between two parties who feel a reasonable hope of being happy together for life, each has entered on a condition requiring the exercise of particular duties. These we shall endeavour to narrate, commencing with advices

To Husbands.—'1. Always regard your wife as your equal; treat her with kindness, respect, and attention; and never address her with the appearance of an air of authority, as if she were, as some misguided husbands appear to regard their wives, a mere housekeeper.

2. Never interfere in her domestic concerns, such as hiring servants, and the like.

3. Always keep her properly supplied with money for furnishing your table in a style proportioned to your means, and for the purchase of dress, and whatever other articles she may require, suitable to her station in life.

4. Cheerfully and promptly comply with all her reasonable requests and wishes.

5. Never be so unjust as to lose your temper toward her, in consequence of indifferent cookery, or irregularity in the hours of meals, or any other mismanagement caused by her servants; knowing the difficulty of making many of them do their duty.

6. If she have prudence and good sense, consult her in all great operations involving the risk of very serious injury in case of failure. Many a man has been rescued from ruin by the wise counsels of his wife; and many a foolish husband has most seriously injured

himself and fatally by the rejection of the advice of his wife, stupidly fearing, if he followed it, he would be regarded as henpecked! A husband can surely never consult a counsellor more deeply interested in his welfare than his wife.

7. If distressed or embarrassed in your circumstances, communicate your situation to her with candour, that she may bear your difficulties in mind in her expenditures. Women sometimes, believing their husbands' circumstances better than they really are, disburse money which cannot be well afforded, and which, if they knew the real situation of their husbands' affairs, they would shrink from expending.

8. Never on any account chide or rebuke your wife in company, should she make any mistake in history, geography, grammar, or indeed on any other subject. There are, I am persuaded, many wives of such keen feelings and high spirits (and such wives deserve to be treated with the utmost delicacy), that they would rather receive a severe and bitter scolding in private, than a rebuke in company, calculated to display ignorance or folly, or to impair them in their own opinion, or in that of others.

To Wives.—1. Always receive your husband with a cheerful countenance—leaving nothing undone to render home agreeable—and gratefully reciprocate his kindness and attention.

2. Study to gratify his inclinations in regard to food and cookery; in the management of the family; in your dress, manners, and deportment.

3. Never attempt to rule, or appear to rule, your husband. Such conduct degrades husbands—and wives cannot do otherwise than partake largely in the degradation of their husbands.

4. In everything reasonable comply with his wishes with cheerfulness and promptitude—and even, as far as possible, anticipate them.

5. Avoid all altercations or arguments leading to ill-humour, and more especially before company. Few things are more disgusting than the altercations of the married when in the company of friends or strangers.

6. Never attempt to interfere in his business, unless he ask your advice or counsel; and never attempt to control him in the management of it.

7. Never confide to gossips any of the failings or imperfections of your husband, nor any of those little differences that occasionally arise in the married state. If you do, you may rest assured that, however strong the injunctions of secrecy on the one hand, or the pledge on the other, they will in a day or two become the common talk of the neighbourhood.

8. Try to cultivate your mind, so as, should your husband be intelligent and well informed, you may join in rational conversation with him and his friends.

9. Regard nothing as light and trifling, that may produce even a momentary breach of harmony, or the slightest uneasy sensation.

10. If your husband be in business, always, in your expenditures, bear in mind the trying vicissitudes to which trade and commerce are subject; and do not expose yourself to the reproach, should he experience one of them, of having unnecessarily expended money of which you and your offspring may afterwards be in want.

11. While you carefully shun, in providing for your family, the Scylla of meanness and parsimony, avoid equally the Charybdis of extravagance.

12. If you be disposed to economise, I beseech you not to extend your economy to the wages you pay to seamstresses or washerwomen, who, particularly the latter, are too frequently ground to the earth by the inadequacy of the wages they receive. Economise, if you will, in shawls, bonnets, and handkerchiefs; but never, by exacting labour from the poor without adequate compensation, incur the dire anathemas pronounced in the Scriptures against the oppressors of the poor.

To both Parties.—1. Should differences arise between husband and wife, the contest ought not to be, as it unfortunately too frequently is, who shall display the most *spirit*, but who shall make the first advances, which ought to be met more than half way. There is scarcely a more prolific source of unhappiness in the married state than this *spirit*, the legitimate offspring of odious pride and destitution of feeling.

2. Perhaps the whole art of happiness in the married state might be compressed into two brief maxims—"Bear and forbear;" and "Let the husband treat his wife, and the wife her husband, with as much respect and attention as he would a strange lady, and she a strange gentleman."

3. I trust much caution is scarcely necessary against flirtations, well calculated to excite uneasiness, doubts, and suspicions in the heart of the husband or wife of the party who indulges in them, and to give occasion to the censorious to make sinister observations; for it is unfortunately too true, that the suspicion of misconduct often produces fully as much scandal and evil as the reality.

It is a good rule of reason and common sense, that we should not only be, but appear to be, scrupulously correct in our conduct. And be it observed, that, however pure and innocent the purposes of the parties may be at the commencement, flirtation too often leads to disastrous results. It breaks down some of the guards that hedge round innocence. The parties in these cases are not inaptly compared to the moth fluttering around a lighted candle, unaware of the impending danger. It finally burns its wings, and is thus mutilated for life. "He that loveth the danger, shall perish therein." "Lead us not into temptation" is a wise prayer; and while we pray not to be "led into temptation," we most assuredly ought not to lead ourselves into it. I know these remarks will be charged to the account of prudery; but, at the risk of that charge, I cannot withhold them.

4. Avoid all reference to past differences of opinion, or subjects of altercation, that have at a former day excited uneasiness. Remember the old story of the blackbird and the thrush. "I insist it was a blackbird." "But I insist it was a thrush," &c.

The preceding rules, if as closely followed as human imperfection will allow, can hardly fail to secure happiness. And should only one out of every ten readers profit by them, I shall be richly paid for their concoction. I cannot conclude this essay better than by adding the following admirable advices of Julia de Roubigné to her daughter, shortly previous to her death:—

"Sweetness of temper, affection to a husband, and attention to his interests, constitute the duties of a wife, and form the basis of matrimonial felicity. These are, indeed, the texts from which every rule for attaining this felicity is drawn. The charms of beauty, and the brilliancy of wit, though they may captivate in the mistress, will not long delight in the wife. They will shorten even their own transitory reign, if, as I have seen in many wives, they shine more for the attraction of everybody else than of their husbands. Let the pleasing of that one person be a thought never absent from your conduct. If he love you as you would wish he should, he would bleed at heart should he suppose it for a moment withdrawn; if he do not, his pride will supply the place of love, and his resentment that of suffering.

Never consider a trifle what may tend to please him. The greater articles of duty he will set down as his due; but the lesser attentions he will mark as favours; and trust me, for I have experienced it, there is no feeling more delightful to one's self than that of turning these little things to so precious a use.

Above all, let a wife beware of communicating to others any want of duty or tenderness she may think she has perceived in her husband. This untwists at once those delicate cords which preserve the unity of the marriage engagement. Its sacredness is broken for ever if third parties are made witnesses of its failings or umpires of its disputes."*

* The above excellent admonitions are from an American work called the 'Philosophy of Common-Sense,' by Mr Carey.

FAMILY RELATIONSHIP.

The marriage state is the foundation of one of the most sacred and important institutions in society—that of a family. A family is a little commonwealth, jointly governed by the parents, but under the more special guardianship and direction of the husband and father, who is morally and legally the *head of the house*. To the father the children naturally look for protection, subsistence, advice, example, and encouragement. The father, therefore, has a serious obligation to perform in the proper rearing of his children. He is bound to educate them according to his means, to support them till they are able to depend on themselves, and to have them taught a business, or put in some other fair way of gaining an honest livelihood. It is also incumbent upon parents to avoid all unseemly partialities towards the different members of their family. The system of favouritism, however, is a mistake into which individuals with the best intentions, and of the most amiable dispositions, are very apt to fall. It is seldom, indeed, that all the children of the same parents are possessed of the same docility, sweetness of temper, and those other qualities which are best calculated to attract and rivet the affections of those who have occasion to be brought most intimately into contact with them; and it is therefore very natural for parents to become more peculiarly attached to those who appear to possess these qualities in the highest degree. This partiality, however, is very frequently entertained towards those who are least deserving of it, but who have the cunning to make themselves appear in the eyes of their parents more amiable than their brothers and sisters. But whatever may be the foundation of it, it is an act of gross injustice to the other members of the family; for they are all equally entitled to parental tenderness and affection. Besides, this partial treatment has a natural tendency to engender strife and animosity among the children themselves. The pet of the parents will seldom prove the favourite of those members of the family who have been unjustly neglected; and who will therefore naturally feel disposed to resent their ill-usage upon the usurper of their rights, as well as to murmur and complain against the injustice itself. The children, on the other hand, are bound to obey their parents, and to exert themselves to make them happy.

Parents are sometimes grievously distressed in consequence of the bad behaviour of their children. Their reasonable hopes are disappointed, their best feelings are tortured. An idle, ungrateful, dissolute son, is such a complicated cause of suffering, as may, if anything may, lead one to murmur at the order of things. It may be admitted that such a parent is very likely to break out with complaints against the world. This suffering, however keen and biting it may be, is not a natural, but a moral evil. There is a moral wrong somewhere. Is it in the parent himself? Has he watched the beginning of error, and drawn his child off from the descending plane? But perhaps the downward course has been long begun upon, and art and deceit have made such progress that the child has been able to elude parental inquiry. This can hardly happen with a watchful parent while his child is under his own roof. Perhaps the downward course has been begun upon when a child is at a distant school, college, or in a place of business, preparing for manhood. If a parent has placed a child where he cannot superintend him, or with those who do not undertake to do this, or who will not if they do, the parent is not excused because others are in fault. A child who is sent away from home is, as the world is now constituted, always sent into some hazard. The hazard is, when least, that the preceptor, guardian, and master may be deceived. The seductions may be such as to plunge a boy into ruin, even before those who see him daily, and who mean to do their duty, have the least intimation of it.

Evils, such as are here alluded to, may be in some measure unavoidable in the present imperfect condition of society; still a parent ought to do all in his power to obviate them by implanting good habits in his children. It would be well, for instance, if fathers of families would endeavour to give their sons a taste for such a judicious course of reading as would lead them from the contemplation of vicious objects of pursuit. If they do so, and put them in a right bias, they may depend on them acquiring a great deal more useful knowledge after they leave school than they could possibly have learned there. Nearly all the men who have distinguished themselves in the world are found to have acquired their knowledge through private desultory study after leaving their classes; and many, in their autobiographies, trace their good fortune to the taste for reading given them by their parents.

A family of children usually consists of the two sexes. There are brothers and sisters. The intercourse which takes place between these parties ought to be of the most friendly kind. They should strive, by mutual assistance and advice, to make each other happy. In many instances, these relations make a very great mistake as to the real good of life, in not cultivating a cordial and affectionate friendship with each other. In early life they are apt to be in each other's way, and to have irreconcilable wants; thus they very soon fall into alienations. They cannot, however, shake off the laws of nature. They must have an interest in each other whether they will or not, and it will essentially promote their mutual welfare to have a kind and gracious one. The common causes of their differences are exceedingly insignificant, and often contemptible. They will see the day when they will so think of them. The time presses hard upon them when they will need counsel, support, and some one to care for them in a manner which none but brothers and sisters can do. When all has gone on well from the cradle upwards among such relatives, they become to each other not only the most useful friends, but the most agreeable companions. They are the natural confidants, when it would be folly to trust any one whose sympathy and solicitude may change. Brothers and sisters, who are thus bound together by affection, sometimes hazard the connection by volunteering friendly, but very unwelcome, commentaries and advice. This is a very delicate matter. Giving unasked advice on any occasion requires very great discretion. If one sees that his brother is blundering, there are many modes of so approaching him as to lead him to find that he needs advice, and of putting him in search of it. If there be a right understanding, he will go where he is sure of having the best and the sincerest. To assume a dictatorial authority over a brother or sister, is to inflict a wound on self-love which is not readily forgiven. We have already noticed the value of civility and politeness between such near connections; and we add, that sincerity and truth are nowhere more profitable and necessary. 'Familiarity breeds contempt' is a true saying, and is very apt to find an application of its truth not only in the intercourse of brothers and sisters, but in that among more distant relations. We beg to warn all classes of relations who frequently meet together, against using too much familiarity, against using too little ceremony, against taking liberties with each other. Let them preserve towards one another the most respectful, yet friendly terms, if they wish to avoid falling into differences. Let them remember that the quarrels of relations are almost irreconcilable, and that even when forgiven, and in a great measure forgotten, they leave very disagreeable feelings among all parties.

DUTIES OF MASTERS AND SERVANTS.

From the earliest ages down to the present time there have been different classes of society. As elsewhere explained, this necessarily arises from the very order of society. The well-established and very proper right of inheritance, and the ability which some members of society have to acquire, and which others have not, the difference of education, and other obvious causes, necessarily produce these distinctions. Who among the various classes is the most contented and

happy is quite another matter. There must be some to serve, and some to be served. They are mutually dependent. We hear great complaints, sometimes from masters with regard to their servants, and sometimes from servants with regard to their masters or employers. This connection is regarded as one of the miseries of life; yet it is not necessarily so. If the connection produce vexation, there must be error somewhere. We shall first speak of the duties of masters:—

It is the duty of masters to cultivate the esteem and affection of those whom circumstances have placed under them. Servants have the same sort of bones, muscles, heads, and hearts, the same self-love, and the same sensibilities, as their employers. They may not be so refined, still they have rights to be maintained, and must not be tyrannised over merely because they are in an inferior condition. They have as good a right to be happy as those above them. If they behave with propriety, and do their duty, they should be spared when sick, advised and relieved when in trouble, and be made as comfortable as circumstances will permit. The commands given to them should be plain, clear, uniform, and not contradictory or capricious. They are not to be sneered at, or commanded with virulence and reproach, but mildly, and rather by request. They are also to be treated with uniform civility and kindness; but every approach to familiarity with them should be avoided, if respect on both sides is to be preserved. It is always best to let servants know what is their duty, and what is expected of them. Much mischief is sometimes created by not attending to this rule.

The duties of servants to masters are equally clear. Their entering into servitude is a contract which they engage to fulfil. They are bound to execute all reasonable and proper orders in the line of service in which they are engaged. But besides this, they would consult their interests in being generally obliging and willing to assist in any kind of exigency. A seeming wish to please an employer goes a great way to compensate for deficiencies in ability. A civil, obliging turn, is indeed one of the chief virtues in a servant, and is certain to secure the affection of masters and mistresses. A strict attention to an employer's interest, regularity of habits, and perfect integrity both in speech and action, form the principal qualifications of a servant. There is usually much less actual dishonesty among servants than a regardlessness of their masters' interests and time. This is more the case with domestic than other servants. This class of persons, who are chiefly females, are very apt to encroach on the time of their employers for their own pleasure and convenience. If sent an errand, they will spend a great deal of more time in executing it than is necessary. It is an idle love of gossipping which generally produces this great failing among servants, and it is our duty here to admonish them of its impropriety. Their time belongs to their master, and it is dishonest to use it for their own purposes, unless by permission. Speaking with regard to persons in service generally, we are sorry to notice that there is a tendency to reduce the terms of contract betwixt employers and employed to one of a purely mercenary nature—so much work for so much money. There appears to be a growing inclination to drop all kindliness of intercourse betwixt the two classes. The consequence is, that many masters feel perfectly indifferent with respect to giving employment to those who have long served them. The injury is, however, mutual; for when servants know that they are only valued in proportion to the amount of their actual labour, and that they will be paid off without regret, they care little for a master's interest. There can be no question as to who began this improper system. It originated in servants and workmen endeavouring to establish by violence and intimidation a certain amount of wages for their labour, and which the state of society could not warrant. We earnestly trust that it is not yet too late to restore the ancient bond of sympathy betwixt every description of employers and employed. Individual and social benefit would be the result.

DUTY OF TRUSTING TO OURSELVES.

There is a duty of an important nature which we have to perform towards society; and that is, we must *trust to ourselves*. We have each been endowed with reason to guide us, and hands to work; why, then, unless prostrated with bodily disease, or some other infirmity, should we think of leaning upon others for support or assistance? It would not be desirable to see men shut up their hearts against each other, and each stand in the panoply of his own resolutions, determined against every friendly appeal whatsoever. It is possible, however, to be not altogether a churl, and yet to take care lest we be tempted into an exertion of benevolence dangerous to ourselves, while it is of little advantage to our friends. Notwithstanding the many ties which connect a man with society, he nevertheless bears largely imprinted on his forehead the original doom, that he must chiefly be dependent on his own labour for subsistence. It is found by all men of experience that in so far as one trusts to his own exertions solely, he will be apt to flourish; and in so far as he leans and depends upon others, he will be the reverse. But there are many who do not recognise this principle. They trust only partially to themselves, and are always poking about after large favours from friends. We find them asking loans of money, asking others to be surety for them, asking acquaintances to interfere to get places for them. If they ask for nothing else, they intrude upon their friends to seek advice. Neither physically nor morally do they seem able to exert themselves for their own behoof. This is so contemptible a mode of living, that it cannot be too severely reprehended. Those who depend on others can never succeed in life. In whatever manner they may be assisted, they can never become front-rank men in society. We would earnestly impress upon the young the propriety of depending as little as possible upon prospects of advantages from others, all of whom have enough to do with themselves. It is obviously the duty of every one to think and act for himself as soon as he attains manhood, and neither be burthensome on relatives nor troublesome to acquaintances. The acceptance of a trifling favour from an acquaintance always lays us under an obligation, which is sometimes difficult to remove. If the acquaintance ever need similar favours, we feel bound to grant them; and perhaps he estimates the original favour so highly, that he thinks we cannot do enough to serve him. In this way hundreds of men are ruined. We would say, as a general maxim, accept no favours, unless upon a principle of common courtesy. If you employ others to execute a piece of work, take care to pay them faithfully and promptly, and lie under no obligation to them, otherwise you may be called upon, when you least expect it, to make payment a hundredfold. Be liberal, affable, and kind; but, knowing that you cannot do more injury to society than by greatly injuring yourself, exercise a just caution in giving way to the solicitations of your friends. Never be too ready to convince yourself that it is right to involve yourself largely, in order to help any person into a particular station in society; rather let him begin at the bottom, and he will be all the better fitted for his place when he reaches it, by having fought his way up through the lower stages.

MAKING A WILL.

Much distress among families is often produced by individuals who have property to bequeath, not making a will or testament. Why such individuals do not make their wills it is difficult to explain. Perhaps it arises from carelessness and a spirit of procrastination, or a want of resolution in men to make up their minds with respect to how they would distribute their property at their decease. Some may indeed be so foolish as to imagine that the making of their will would hasten the approach of death. From whatever cause it proceeds, it is a highly blameable failing. It is the duty of every person possessing property, whether engaged in busi-

ness or otherwise, to make a will, and describe in some species of document how he would wish his affairs to be arranged in the event of his dying. There certainly are cases in which men of property would not wish their possessions to be distributed in any other way than as the law would dictate; yet it is a mark of a well-regulated mind to leave a will descriptive of the means to be pursued in the accession to, and management of, their property and concerns. To do so at least would often save a great deal of trouble and some expense, and be a preventive of litigation among relations. We therefore must insist that the making of a will is a sacred duty which ought to be performed, and performed without procrastination. In the midst of life we are in death; no one knows but in an hour hence he may be no more. We beseech fathers of families, and others similarly placed—those even who may have property but to the value of a few pounds—to lose no time in executing their will. By leaving so much as a letter subscribed by their name, to be opened after their decease, they may spare much vexation to those whom they hold dear; they may quench much petty jealousy, much unseemly disputation and strife.

MISFORTUNES—EVILS.

Evil is a part of the system of things in which we live, and, as such, must be patiently submitted to. Man was intended to be an active creature. One of the grand aims of the Creator in his formation evidently was, that he should never settle down into a sluggish or stagnant state. It would have been easy for the Divine power which breathed into him so wonderful a thing as life, to have surrounded him with nothing but blessings, as they are called, so that he would have nothing to do but enjoy himself. But this would not have produced what the Almighty wished—a world in which a rational being was to exercise his faculties, and use his endowments, with a proper regard to a certain end; an account—namely, to be rendered at the close—of what and how he had done. We are here placed between evils which we are to avoid or subdue, and good which we are to aim at and enjoy; and hence, instead of being a set of torpid machines, as we would have been in anything like a world of perfect happiness, we are in a perpetual state of vigilance and activity, making the fullest use of those mental and bodily properties with which we have been gifted.

If we narrowly inspect the evils or misfortunes with which we are visited, we will find them invariably to be either of two kinds. Some are the simple result of an occasional and habitual violation of the laws of nature, or an occasional or habitual failure in that vigilance and activity which we are bound to employ for the avoiding of such distresses. These may be called moral evils. The second class are the result of circumstances over which we had no control, and may therefore be called natural evils. Such a division, however, is only necessary in the present state of our attainments as a race; for there can be no doubt that means were intended to be discovered by the ingenuity of man for the avoidance and neutralisation of all evils whatever; and therefore, in the case of what we call natural evils, we should only consider ourselves as the victims of imperfect knowledge, and be on that account the more induced to strain after the improvement of ourselves and of our fellow-creatures, so as to obviate these as well as the rest.

Great care should be taken, when an evil befalls us, to ascertain whether it be moral or natural—in other words, whether it be the consequence of our own error, or of circumstances at present beyond our control. Our self-love makes us extremely apt to attribute all our mishaps to the latter cause; but if we are wise, we will not do so. We will rather search back unscrupulously into our own nature, or our own history, for the causes of the evil; and if we find them there, resolve for the future to be more circumspect or more active, so as to make a recurrence of the mischief less likely. The most of the accidents that occur, though they appear at first sight to be natural evils, would be found, on close inspection, to be moral. The most of the diseases that befall us could be traced to a failure in our duty to ourselves, and are therefore moral evils: the rest, such as cancers, wens, organic malformations, &c., which appear natural and unavoidable, are, we have no doubt, moral evils also. If *we knew better*, we might probably avoid them, as easily as we can avoid colds. They may be called natural in the meantime, but not so unless mankind strive to discover their causes, so as in the long-run to obviate them. They are certainly destined to be obviated at last, as many disorders, now understood, formerly were; and men must at present consider them only in the light of an inducement to the exertion of the spirit of inquiry.

There are some evils which we incur through hereditary channels, and are quite beyond our own control. We are charged, for instance, with the seeds of a harassing ailment, or of an early death, by the long foregone and perhaps long-repented vices of our parents. But all this may be accounted for on the same principle. It has been intended that our moral natures should be so much improved, that even the possible distresses of a descendant may operate as a check to our wickedness; and what is a contemporary instance of innocent consumption, but a warrant to prevent us from doing that which may bring future lives into the same hazard? It is hard in the meantime for the sufferer; but what can we say against the course of nature? Perhaps the spectacle (and few can be more painful) of a youth dying in his very bloom, in consequence of natural debility derived from weakly parents, may be the means of preventing two persons from putting themselves into the situation for bringing on similar evils. A very high kind of conscientiousness, but one not unattainable even by ordinary minds, is called into force by the contemplation of such a case of unbought distress. A man who has any reason to fear for the validity of his own constitution, will, if fully impressed with a sense of such results, as likely to arise from his quitting a condition of celibacy, condemn himself to perpetual solitude rather than purchase an improvement of his own happiness at the expense of unreckonable evil to others. Fortunately society is beginning to look more narrowly into such matters than it used to do; and we do not despair of seeing a time when it will be nearly as infamous to communicate life under certain circumstances, as, under others, to take it away.

There are other evils which affect society, and which do their full part in making this a world of wo. There is squalid miserable poverty; there is disgusting lamentable vice; there is horrible crime, public execution, and national war. All these things, it is said, are inevitable; they spring from the nature of man, and from the laws which compel him to dwell in social connection. Those who say so are shallow thinkers. The world is naturally a beautiful world. But what God has made a paradise for our dwelling-place, mankind have often rendered a desert by their crimes. Nature and revelation alike proclaim that the Creator intended we should be happy; but how has brutal ignorance, vile intemperance, gross crime, and every species of evil desires, blighted our comforts and degraded our immortal being! It has never yet been proved that there must *necessarily* be poverty, which is the source of many evils. A striking instance of the absence of poverty in a large class of society is found in the case of the Quakers, or community of Friends. With some peculiarities in speech and dress, not worth while to heed, this numerous body of individuals act upon a fixed uniform principle of suppressing the passions. They curb the appetites and headlong impulses of human nature. In this may be said to lie the substance of sound morals. The Quakers, therefore, habitually practise what other classes only theorise upon, at least are seldom performing. The consequence of this guardedness in thought and action is, that although there are many thousands of Quakers in Great Britain, and many thousands in the United States of America,

neither in the one country nor the other do we ever find a Quaker begging in the streets, or an intoxicated Quaker, or any one of this class of subjects and citizens at the bar of a criminal court! The Quakers are, like other people, engaged in the common affairs of the world; they are merchants, mechanics, artificers, mariners, and otherwise employed in the ordinary business of life. They are subject to the same temptations and perversions that we are; yet, by the exercise of a singular degree of self-respect and prudence, they avoid them. Here, then, is a clear demonstration, that even without the aid of civil power, but by the mere force of moral influence, there is a class of men in the midst of society who do escape disgraceful poverty, and who are free from outrageous vice and crime.

With regard to death, which is so generally looked upon as an evil, and the last and worst of all, it is in reality no such thing, unless it occur prematurely, which it never would do if men were perfect in the observation of the laws of nature. As the conclusion of an existence which never could have been given if others had not died, it must be regarded as only a part of our earthly destiny, and submitted to accordingly.

INEQUALITY OF RANK AND CONDITION.

When the young grow up, they find society to consist of classes of various degrees of rank and condition; some with titles of distinction, others without any title whatever; some rich, some poor, and many in a middle state between great wealth and poverty. The youthful reasoner perhaps thinks that all this is wrong, and that by *natural right* all men ought to be upon a level. It is proper that not only the young, but others who take up notions of this kind, should be told why these differences originate, and why they exist. Mankind, we may suppose, were originally equal in rank and condition; and they might have remained so, or nearly so, had they continued to remain in primeval barbarity, and lived apart from each other. But it was not in their nature to remain in this condition. According to naturalists, man is a gregarious animal—that is, he desires to live in society. As soon as men began to consort together, they began to separate into ranks and conditions. He who was the bravest was made king; he who was the most clever or the most prudent became the most wealthy; he who was the most idle became the most poor. From this kind of beginning all ranks and conditions sprung; and subsequent events have modified society into what we now see it. It may be said that this explanation would do very well if we now found that those who enjoy distinctions in rank were the cleverest of the people; if we found that the richest were always the most deserving of riches. Here again we must apply to human nature.

In one sense titles are contemptible; they are fantastic trappings which a wise man would not covet. But, on the whole, there are few men possessing that degree of wisdom and self-denial which would lead them to despise titles or the dignities connected with them, *when applied to themselves*. As far as we can discover, the Quakers are the only people who do not regard these things. The citizens of the United States of America affect to despise titles; yet it is curious they give a title of distinction to their chief magistrate, whom they style '*His Excellency*;' they also write *Master*, or its contraction *Mr*, before their names. In this we see a degree of the same vanity and weakness which affects the subjects of ancient monarchies. It would appear that there is a yearning after these follies among mankind. Be it so or not, it is an idiosyncrasy which, from time immemorial, has been seized hold of by rulers for the purpose of stimulating men to deeds beneficial to their country. The prospect of being entitled to write *Sir* before their names, or of being called a *Lord*, induces numbers of individuals to do great and good actions, which they would not do for money. As these titles generally descend to their children, they have a double stimulant to action. Genius not being hereditary, these titles may and do fall into the possession of men of no ability; nevertheless, the stimulant to acquire titles such as they have, continues to act beneficially, as it is thought, through the nation; and they themselves feel bound to sustain a certain honourable character consistent with their rank. And although that equality of rank for which visionaries contend is utterly unattainable in any state of society, yet in this happy country there is a more important kind of equality which is enjoyed by every individual member of the community: all British subjects are on a footing of perfect equality in the eye of the law. In our courts of justice no difference is recognised between the peer and the peasant. The highest rank cannot protect the offender from the vengeance of the laws; the most obscure condition will not prevent the aggrieved party from having the strictest justice administered to him. And besides, there is no rank or condition to which a British subject may not successfully aspire; the proudest honours of the peerage, and the highest offices of the state, being open to the ambition of all who possess sufficient merit to entitle them to such distinction.

The principles of human nature apply in a similar manner in solving the mystery, why there are men enjoying riches which they never wrought for, and may be undeserving of. Riches consist of that part of the surface of the earth which can be used for human habitations and their appendages; of that part which can be used to produce vegetation; of that part over which, and near which, there are flowing waters capable of imparting motion; they consist of all personal estate; and of money, the agreed representative of all property, which is, at the same time, property in itself. Possessions of these various kinds are acquired by inheritance or by industry. Right by inheritance is not wrong. Would any rational mind maintain that, when the father of a family, or any one who has no family, has acquired property, and dies, that it shall belong of right to any and to all who can get possession by fraud, force, or whatsoever other means they may? Society could not be held together if such were the rule of right. It is at once apparent that if such were the rule, there would be nothing to contend for, because all inducement to acquire for the benefit of one's family and connections would be annihilated. Society would be forthwith reduced to barbarism. The right to acquire, and the right of inheritance, are wisely ordained to be a necessary consequence of society, and one of its strongest motives to act to useful ends.

If it be irreconcilable to justice, to convenience, and to the common good, to take by fraud or violence that which the dead must have left behind them, much more so is it to take from the living, by like means, that which they can honestly acquire by the exercise of their own industry. If a member of a community were always liable to be despoiled of the fruits of his labour, the great principle of the system of being to which man belongs would have been misplaced: there would have been no sufficient motive to action. If one would know what society would be, if such were the law and the practice as to property inherited or acquired, he must visit countries steeped in barbarism, and on which the light of Christianity does not shine.

It is contended by some persons that there should be a periodical division of land and property, and that every member of the community shall have an equal share. How often should this division be made? Shall it be made once a year, once in ten years, once in fifty years? Why should it be made at one time rather than at another? Suppose it could be made, and were made, it must be but a very short time before it ought to be made again, if the reason for making it be, that some have more and some less, and that some are rich and some poor. One must be wilfully blind not to see that either the whole action of society must stop, or that inequality of condition would arise in a single year, perhaps in a single month; and even such inequality as would call for a new division. In a country where the spirit of enterprise and speculation has an unrestrained agency, the causes of regret are, that and

reverses occur, and that property changes hands too often, rather than that it is unreasonably held in the hands of a few of their successors. A small number of generations is sure to bring equality, considering our community as a continuing one. Thus property comes and goes, in this and other free countries, as fast as any one can reasonably desire to have it. The changes which are seen as to the ownership of it are regulated by authority far wiser than any of man's institution.

ON FORMING OPINIONS.

Opinion signifies belief. There are good and bad opinions. It is our duty as rational beings to cultivate good or correct opinions upon every subject, and to eschew those which are of a contrary description. There is nothing more easy than to form hasty, inaccurate opinions, but it is very difficult to form a correct belief on many topics. Opinion is found to be more or less dependent on times, circumstances, and bodily temperaments. It frequently arises out of prejudice, and is often influenced by impulse. When we form an opinion upon any subject, we are inclined to believe that all opinions of an opposite character have been, and are, erroneous. We are apt to laugh at everybody's opinion but our own. All this betrays a deficiency of sober reflection, an ignorance of the history and faculties of mankind, and a want of knowledge of the world. The people of every country possess opinions favourable to their own fashions, customs, laws, and religion, and unfavourable to those of other nations. A love of one's own country is certainly a commendable feeling, but it should be a love arising from examination and conviction, not from prejudice. The Hindoo worships the river Ganges. *We*, by our education, know that this is nonsense. The bigoted but conscientious Turk will go to death upon it, that Mohammed was a true prophet. *We*, by our superior intelligence and reading, know that Mohammed was a vile impostor. The people who lived in our own country a hundred years ago were of belief that certain old women, whom they termed witches, could, by supernatural powers, raise tempests at sea and land, and malevolently interrupt the course of human affairs. The people who possessed this belief were perfectly conscientious in their opinion; yet we know that this opinion was a gross absurdity. *We* know that our ancestors believed in an impossibility. Opinion is therefore, as we see, a thing of time and place. The opinion that is supposed to be right in one century, is wrong in the next. What is considered to be a right opinion in Asia, is thought wrong in Europe. What is deemed a correct and praiseworthy belief in Britain, is reckoned an absurdity in France. Indeed it is often seen that the opinion which is held good in one district of a country, is looked upon with contempt in other districts—so that the whole world is found to be covered, as it were, with a variety of opinions and shades of opinions, like the diversified colours by which countries are depicted in a map. Opinion, we have said, is also dependent on temperament of the body. This is a melancholy truth. A fat and choleric man does not think in exactly the same way as a lean man. A man who enjoys all the comforts which opulence can purchase, has a tendency to think differently in some things from a man who is suffering under misfortunes or poverty. So strangely constituted is the principle which governs human opinion, that most men have reason to alter their opinions on many points in their progress through life.

What does all this wonderful contrariety of opinion teach us? Since we see that opinion is dependent on the locality of our birth, on the age in which we live, on the condition in which we may chance to be placed, and on the physical qualities of our bodies, have we therefore no power over opinion? Must we be its slave? These are questions of a solemn character, and we must answer them soberly. The contrariety of opinion existing in times and places teaches us, in the first place, *humility*, which is the foundation of many heavenly virtues. It shows us that the opinions which we may form, particularly on abstract subjects, may possibly neither be the most correct nor the most enduring. Perhaps what we have taken up and cherished as our opinion may after all be a delusion. In learning a lesson of humility and distrust of our own style of thinking, we are impressed with a tender regard for the opinions of others—opinions which most likely have been taken up on grounds equally conscientious with our own.

Although opinion is commonly dependent on those contingent circumstances which we have noticed, it cannot be allowed that we have no power over it. We have a power over the formation of opinion to a certain extent, and it is our present object to show how this power can be exerted in order to enable us the better to fulfil the duties of life. The reason why opinion is so illusory in its nature is, that mankind have ever been excessively careless in the adoption of their opinions. They are in the habit of picking up random ideas, which they mould into an opinion; and after having made up their minds, as they call it, on what *they think* is their opinion, they will listen to no explanation of the opinions of others. Their obstinacy, their self-conceit, their self-interest, their wish to please the party to which they have attached themselves, induce them to hold fast to their original opinion, until time or experience in all likelihood wear it down, and its absurdity is secretly pressed upon their notice. But even after its absurdity is disclosed, they are sometimes ashamed to say they have altered it; and so perhaps they have one opinion which they keep locked up in their bosom, and another which they bring into daily use, and flourish before company. In the opposite language of Scripture, these men war against the TRUTH.

It is our duty, as good members of society, and with a view to self-respect, to be very cautious in the formation, and, most of all, in the display of our opinions. Many excellent men, on arriving at middle life, have deeply regretted that they should have heedlessly published their early and hastily-formed opinions in youth. They had reasoned, as they thought, soundly, but it was without a knowledge of the world or its history. Speaking to the young, we would say—while yet under the training of parents, guardians, and teachers, it is your duty to receive with confidence the instructions by which it is attempted to enlighten your minds, and to put you in the way of welldoing. But these friends of your youth will probably tell you that when you pass from under their guardianship into the active scenes of life, you become a responsible being—responsible alike to human and Divine laws—and that you must now think for yourself. At this critical period of your existence you have every chance of coming in contact with the idle, the dissipated, the frivolous, who will try to make you embrace erroneous opinions, and who will possibly put the most mischievous books into your hands for perusal. Do not be led away by such machinations; neither be dismayed by the number of wits or profane jesters who may assail you. Do your duty manfully. In order that you may attain a correct opinion on the great debateable subjects that you will hear rung in your ears through life, begin a course of reading those good and authoritative works which intelligent friends will recommend to your notice. Take every opportunity of cultivating your understanding, of enlarging your ideas, of banishing prejudices. Look always at the different sides of a question; for you must remember that there are always many ways of telling a story. In proportion as you advance in your private studies, and acquire a knowledge of the passions and conduct of mankind, you will more and more be able to form a correct opinion. There is one thing which you will learn with surprise from this kind of experience; and that is, that many, though holding different opinions, are driving towards the same end in the main. They have only differed upon trifles, and perhaps fought about mere words. This is one of the strange weaknesses of the human race, into which you will find it difficult to avoid falling. The more that you learn, the

more will you see cause to entertain a liberal view of the opinions of others. It is the exercise of this liberality of mind which forms a distinguishing trait in the manners of our country. By the British constitution, every one is allowed perfect freedom of opinion, a gift above all price, which it is our duty not to prostitute or abuse. Let us form our opinions on solid grounds of conviction—let us cherish these opinions to the adornment of our lives—and let us so maintain a due regard for the opinions of others, that we show forth in our feelings and actions that most excellent and amiable of all virtues—CHARITY.

These observations apply indifferently to various subjects upon which opinions may be formed; and we would, in conclusion, beg to say a few words in particular on opinions of a political nature, which are the most difficult of all to be correctly formed. Political opinions are applied to the theory and practice of national government. The policy of national government is not an exact science to be learned, as some would imagine. It is more a fashion than a science. It is a thing dependent on time, place, and other circumstances. The form of government which suits one age or country would not suit another age and country. Some nations are best governed by a despotism, others by a mixture of monarchy and democracy, others by a pure republicanism; but, as we say, what is best at one time is not best at another. The genius and necessities of every people are subject to change, and consequently their governments change with them. If we feel the force of these facts, we will be cautious how we assume an unalterable opinion upon any mode of administering government. The young are particularly liable to take up notions on this subject which they afterwards feel inclined to fall from. We would admonish them to read and digest the history of their country, and reflect well upon the genius of the nation, before they come to a determinate opinion in politics. They will learn, as they advance to maturity, that in nothing is there such a mass of duplicity and affectation as in political matters. They are therefore called upon by duty to examine extensively, and probe deeply, the grounds upon which they form their opinion. They will find it much the safest course, as already expressed, to think lightly in the matter till they have had some experience of the world, and been convinced by the evidence of their senses. National exigencies sometimes call upon us to engage more deeply in politics at one time than another. Discretion must here be our guide; yet there is generally greater danger in our wasting much precious time on political disquisition, than in falling into an apathy upon public affairs. He is a wise man who knows how so to guide his steps as to preserve himself from falling into either extreme. Every one who has been for a long series of years politically busy, will acknowledge, that though he thinks he was right in the main (in which opinion he may be right or wrong), yet that he has spent many busy hours and anxious thoughts on subjects which, looked back upon, are seen to have been profitless and insignificant.

DUTIES WHICH THE PEOPLE OF ONE COUNTRY OWE TO THOSE OF ANOTHER.

It is seen that all the people of the earth belong to some one of the many nations with which it is covered. It is also seen that nations are generally separated from each other not only by language, manners, customs, religion, and forms of civil government, but also by geographical boundaries. The division of mankind into nations is natural, and possesses obvious advantages. There is a limit beyond which the government of a nation cannot well be administered. By being confined within certain limited bounds, the national institutions may be improved, security and prosperity promoted, and the interests of the people advanced. We frequently find that the people of one nation live at enmity with those of another nation. We find many at open war with their neighbours—that is, they are resorting to brutal physical force to settle a dispute. These are evils deeply to be deplored. Nations have mutual wants, which a mutual intercourse and trade will obviate. They have similar interests at stake. Their inhabitants all alike belong to the great human family, and should live at peace with each other. But ambition, and many evil passions—strife, malice, and uncharitableness—are continually in operation to retard their advancement towards a universal philanthropy. National war is the heaviest curse which afflicts humanity. It leads to enormous debts and taxations, and in reality is the beginning of all kinds of distresses among the people. Yet the people have been frequently very clamorous for war. We say *have been*, for we hope that this sentiment will in future be otherwise regulated. We ought to impress upon our minds a surpassing horror of war. Let us think of it as the scourge of the human race, and as one more destructive, physically and morally, than the most virulent epidemic. Were the inhabitants of countries duly impressed with these feelings, did they reflect upon the blessings which are showered upon nations during a lasting peace, they would henceforth resolve to oppose, by every constitutional means, the commencement of wars by their governments. Besides the actual loss of lives and of property to a nation during war, it is incalculable the injury sustained by society by such an infliction. A war of a few years' duration may retard intellectual improvement for a century. We hold, therefore, that it is the duty of every man to discountenance such a system of folly. He cannot be a lover of his country, he cannot be the friend of moral cultivation, who would countenance such an idiotic process of settling quarrels between intelligent nations. According to a rational view of men's condition in separate nations, war can in no case be reconcilable with social happiness, unless on the obvious principle of self-defence. So long as there remain such masses of ignorance over the earth, so long, we are afraid, force must be employed to preserve the little spots of civilisation from the flood of barbarism which might overrun them. May it be anticipated, however, that this urgent necessity will not exist much longer! How glorious would be the prospect if universal peace were permanently established! We should find one nation instructing another in all the arts and sciences of which it was itself master: we should find an honourable spirit of emulation running through the whole; and all shaping their policy so as to promote the most beneficial intercourse in commerce, literature, and refinements. In the present state of things, as far as it can be accomplished, a kind and friendly international communion is a high moral duty. It is our duty to look with an eye of charity on national peculiarities. We have no right to insult the feelings of the people of any nation, however strange their language, their fashions, or their customs may appear to us. We have likewise no right to taunt them with any apparently improper characteristics in their forms of government. It is our duty to consider them as entitled to live and act according to their own fancy, as independent responsible beings. To write, print, and disseminate any scurrilous jests tending to lower them in general estimation, is not only immoral, but inconsistent with those principles of manly honour which do not permit any one to be struck who cannot defend himself. When we therefore insult a foreign nation by our obloquy, we commit the mean and cowardly action of injuring a party which has no means of redressing the grievance.

RECREATIONS AND AMUSEMENTS.

We have often had occasion to show that this state of being is one of alternate action and repose. There must be serious action, and there must be amusements. It was intended that mortals should be pleased and happy, if they deserve to be so. Those who maintain that life is to be an uninterrupted scene of labour and gravity are, we hope and believe, entirely mistaken. We discern nothing in the natural world, nor in man's peculiar constitution or relations, which gives the least

countenance to such an opinion. Amusement, like everything else in which free agency is concerned, may be innocent and grateful, or improper, pernicious, and introductory of the worst of evils. Young persons must have the former, or they will seek out the latter. It is the duty and the interest of parents to lead children to take pleasure in such things as can be approved of, and to divert children from such as must be injurious to them, and afflictive to those who are deeply interested in them. We apprehend that there may be persons, and classes of persons, who will disagree with us on this subject, as they may have done on some which have been already touched upon. We should deeply regret to displease any one; but on a matter so important as the making good citizens and moral agents out of children, one should not hesitate to speak frankly. If wrong, persons better able to judge will take care that no evil visits them in consequence of such error.

Amusements are physical or mental. It may be more proper to say that there may be, *first*, amusements which are intellectual, and *second*, such as consist of some bodily motion, in which the mind is more or less interested. If there be such distinctions, athletic sports may be of the second sort. The simple use of the eye, of the ear, and of the imagination, may be of the first sort. It is believed that all amusements must have some contemplated end or result, whether that be defined and certain, or contingent. We believe so, because everything in this world seems to be moving on to some purpose. One who is acting without knowing for what, is neither labouring nor amusing himself, but is trying to get rid of himself, and of time. The most captivating sports are those which are contingent; that is, sports or occupations wherein the result may be highly favourable or otherwise. No one engages in them without expecting to come out on the successful side. Hence hunting, fishing, horse-racing, and gaming are of this order. The hope of success is a very high excitement, but the mortification and distress of failure ever far exceed the pleasures of success. There is a tendency to discourage out-of-door sports. This is certainly wrong. If not carried to excess, they are among the most salutary and pleasing amusements in fine weather.

Every one admits that the mind and moral faculties are to be developed, and strengthened, and made to do the best, by exercise. This is equally true of physical power. Every action which it can be proper to do at all, ought to be done in the best way, otherwise we do not answer the end of our being. In the vegetable and animal departments, all proper care and cultivation tend to use and beauty. Is there any reason why the physical powers of man should not have care and cultivation to the same ends? Those who prefer a stooping, lounging, awkward, graceless figure and motion, may be on one side of the question; those who think that it was intended that man should be an upright, easy, frank, comely, and convenient being to himself, and pleasant to all within whose observation he may come, will be on the other.

Although the frame of man is so made as to permit him to assume an endless variety of positions, and to apply his strength in all of them, he does, or should, return always to an upright position. No essential deviation from this position can possibly be a natural one, but for a temporary purpose. This is proved by the framing of the human bones. This framing shows that when one walks, it was intended that he should be perpendicular; if he walk in an inclined position, he has not only to move himself, but to resist the power of gravitation at the same time. The muscles in such case have a strained and unnatural duty to perform. It seems to have been intended, by the same sort of proof, that human beings should walk with the lower limbs—that is, from the hips downward—and not with an unmeaning and ungraceful action of the whole person, as is often seen to be done.

Dancing.—As to the best modes of acquiring strength, ease, and grace, there may be very different opinions. There are many who think the discipline of *dancing* a proper mode, and others who think this highly improper. We would not run against any opinions, whether well or ill-founded. But as to dancing, just like everything else, it may be misused and perverted, or be made to be an innocent, healthy, and commendable accomplishment. There is no mode so much within the reach of the community in general as this. Properly taught, it brings out the power of the muscles, and gives them their natural action: all natural motion is graceful. Why should not man conform to this general law of nature? Dancing well is one mode of conforming. Possibly it is considered frivolous and corrupting. Nothing is frivolous in this system of being which is innocent, pleasing, and adapted to promote healthy action. Persons who are capable of being corrupted by dancing, will certainly find some much more effective mode to become so if this be denied to them. Dancing among the very young is usually conducted under the eye of discreet seniors, and well-educated adults need no supervision in dancing but that of good sense and their own self-respect. But suppose dancing could in any case be perverted, so may everything else be. If we are not to do anything till it is impossible to err in doing it, what will there be for any one to do?

Music.—It is one of the most convincing proofs of the benevolence of Deity, that he has so formed the human ear as to make it capable of finding a rational and elevated pleasure from the action of sound. There might have been organs of speech, and ears to hear, without imparting to the ear the power of knowing and delighting in music. It must have been intended that this gift should be used, and (most probably) as one mode of praise and thanksgiving, as well as for innocent pleasure. Music is action; it is action to some end; the end is innocent and delightful. The enjoyment has the advantage of being solitary and social. Music may be made to produce a sense of high moral feeling, and it may be made to produce feelings of an opposite character. The same rules must be applied to this subject as to all others, that everything was created, and for some good and wise purpose; and that everything must act, and will act, to some useful end if human ignorance or error do not interfere.

It is consistent that man, as he is so superior to all other animals, should be alike superior in the making and enjoying of musical sounds. He undoubtedly is so. His voice (it would be more proper to say woman's voice) includes all the sweet sounds which can be made by all other animals. He has, by cultivating this power, by applying the atmosphere through the human lungs, and by delicacy of touch, and by bringing substances in contact with each other, and by sending the wind through that wonderful work of his own hands, the organ, found the means of rendering tribute to the Most High, and of softening and purifying his own heart. No doubt music was given to mortals for their amusement, and it is their duty to take it in that light, and be thankful for it.

Games.—Games at cards are a very common amusement. They may be innocent, but there is nothing to recommend them. They give no action to the body; they are a very humble occupation for an intelligent mind. Whether the chances in distributing fifty-two pieces of spotted pasteboard fifty successive times in three or four hours shall possess some of the engaged with fortunate pieces, and others with unfortunate ones, can hardly be said to be doing anything to any useful end. When the sport is over, the thing proved or arrived at is, that in this use of four hours of a short life, A counted so much, and B so much. This, however, is not the end usually proposed in playing cards. The cards are only the machinery which, with more or less skill, submits to the laws of chance the result of emptying one man's pocket and filling another's. A passion for this kind of gaming extinguishes, or converts into a withering curse, every fine feeling of the human heart. Time, health, property, the proper use of the tongue, character, self-respect, and peace of mind, are the sacrifices made at the gaming-table. Unnoticed by the miserable victim,

the shackles of habit are put on, which no earthly power can unrivet. When the gambler's last shilling is gone, he starts as from a dream into a full sense of the complicated misery and ruin in which he has involved himself. He must then devote himself to infamy, and submit himself to the power of a gravitation which will bring him inevitably to the bottom of its abyss. The evils of gaming may be readily judged of by the number of suicidal deaths which it occasions, especially in the great cities of Europe.

All gaming for property leads, in proportion to its character, to such results. The means of gaming, and especially with cards (as they are the easy and most common implements in use), are regarded with the abhorrence which is associated with them by all persons who feel an interest in the young. The young and the middle-aged have no need of cards for amusement. They may have many amusing occupations which are innocent and improving. There may be persons in an advanced time of life, who are beyond the seduction of gaming, to whom the interest of a game of cards may be an innocent and welcome amusement. Undoubtedly, friends who are met for social purposes, and who have nothing better to do with their time, hands, and minds, may play cards in a manner to give no offence to themselves or others. But it is pleasing to know that the state of improvement is such, that in most social meetings there are higher entertainments than that which cards afford, and which are justly in higher esteem.

There might be games, one would think, adapted to amuse children, and to be at the same time innocent and useful ones. Whatever they are, they must be consistent with the principle which requires a beginning, an interesting succession of circumstances, and a result worth attaining. Children must be busy. To require of them to be still, is to require what nature has forbidden. To place a child on a hard bench, and tell him to sit still there two or three hours, without any employment for his hands or mind, is as great a violation of natural law as to require of him to stand on his head for the same length of time. There is an obvious want in the means of amusing children; and we apprehend that it arises from disregarding the principles on which the construction of physical and intellectual being rests. If there were an extensive workshop, provided with every variety of tools, with a proper superintendent, to which boys might resort on some proper arrangement, and where they could make articles for themselves, there can be little doubt that it would be diligently frequented. The reason is, that their little efforts would be to some end, and by natural means. On the other hand, the gymnastic machinery is fallen into disrepute. These exercises are uninteresting repetitions to no end, except with those who know that bodily motion must be had to secure health. In such case they endure the labour for the end in view. But the amusements of the young must be of a nature to secure action to an innocent and useful end, and health will take care of itself. Perhaps there may be some persons who can follow out this matter, and invent rational amusements. They would deserve to be regarded as benefactors, and would probably find a substantial reward. We cannot but remark that there is one game which is one of the most interesting and healthful that can be played—that of tennis or handball. There are many things to recommend it; and among others, it is one sufficiently interesting to be played for itself, without adding to it the zest of winning or losing anything but the game. We incline to think that it is the game, of all others, which deserves the patronage of colleges and seminaries, and is well adapted to develop the physical force.

Conversation.—The principal amusement of rational people is the interchange of thoughts by speech or conversation, which word is made out of the Latin words *con* and *versor*, and means literally *to be turned to* or *with*. The principal of this amusement is found in the law of association of thought. Intelligent persons can always make a conversation. The only difficult step is the first; that ought not to be so considered. Persons who are skilled in the art of talking can always give it a direction. The purposes of conversation are, to put one's self in the way of learning something; to impart something that others want to hear; to form opinions on interesting subjects; to settle the merits or demerits of public action; to recount amusing or extraordinary facts, &c. &c. Every human being knows something which he is willing to tell, and which any other that he is in company with wishes to know; or which, if known to him, would be amusing or useful. To be a skilful conversationist, one's eyes and ears should be busy; nothing should escape his observation. His memory should be a good one, and he should have a good-natured willingness to please and to be pleased. It follows that all matter of offence in conversation should be avoided. The self-love of others is to be respected. Therefore no one is tolerated who makes himself the subject of his own commendation, nor who disregards the feelings of those whom he addresses. There is as much demand for politeness and civility in conversation as in any other department of social intercourse. One who rudely interrupts another, does much the same thing as though he should, when walking with another, impertinently thrust himself before his companion, and stop his progress. Under favourable circumstances, and among persons who know how to train a conversation, there are few, if any, amusements more grateful to the human mind. We need not say anything of the amusement derived from reading. It is very properly one of the standard amusements of persons of all ages. The influence of the press on the character of a country is not to be measured or calculated. It is strikingly true of this admirable invention, as it is of so many other things in natural and moral agency, that, *well used*, it is an inestimable blessing; ill used, the corrupting demon of social life. Happily, attention to the proper wants of the young has required of the press its action for their benefit; not as to books of severer study only, but sheets of amusement.

RELIGIOUS OBLIGATIONS.

Religion signifies a system of faith and worship. Religion arises from man's perception of his relation to the system of being of which he is a necessary part. The presence and influence of religion is to be felt and manifested throughout the duration of human life, in all that is thought and done, with a view to a happier and more perfect state of existence after death. Just conceptions of the character and attributes of the Deity are of the utmost importance, especially to the young, whose minds require to be led aright in all that pertains to the great truths of religion. The religion professed in this country is Christianity—the most cheering, the most noble of all faiths. The books to which we point for instruction in the religion of Christ are those of the Old and New Testament. To them the instructors of the young will direct the religious studies of those under their charge as may best seem fit. Besides inculcating religious obligations, these works furnish us with the most perfect system of moral duty ever promulgated. The sum of the earliest delivered moral law is comprehended in the Ten Commandments, which are as follow:—'1. Thou shalt have no other gods before me.—2. Thou shalt not make unto thee any graven image, or any likeness of anything that is in heaven above, or that is in the earth beneath, or that is in the water under the earth: Thou shalt not bow down thyself to them, nor serve them: for I the LORD thy God am a jealous God, visiting the iniquity of the fathers upon the children unto the third and fourth generation of them that hate me, and showing mercy unto thousands of them that love me, and keep my commandments.—3. Thou shalt not take the name of the LORD thy God in vain; for the LORD will not hold him guiltless that taketh his name in vain.—4. Remember the Sabbath-day, to keep it holy. Six days shalt thou labour, and do all thy work: But the seventh day is the Sabbath of the LORD thy God; in it thou shalt not

do any work, thou, nor thy son, nor thy daughter, thy man-servant, nor thy maid-servant, nor thy cattle, nor thy stranger that is within thy gates: For in six days the LORD made heaven and earth, the sea, and all that in them is, and rested the seventh day: wherefore the LORD blessed the Sabbath-day, and hallowed it.—[By the practice of Christians, the Sabbath has been transferred to the first day of the week.]—5. Honour thy father and thy mother, that thy days may be long upon the land which the LORD thy God giveth thee.—6. Thou shalt not kill.—7. Thou shalt not commit adultery.—8. Thou shalt not steal.—9. Thou shalt not bear false witness against thy neighbour.—10. Thou shalt not covet thy neighbour's house, thou shalt not covet thy neighbour's wife, nor his man-servant, nor his maid-servant, nor his ox, nor his ass, nor anything that is thy neighbour's.'

Such was the sum of the moral law until Christ added to it a number of the most transcendently excellent admonitions, and which are found scattered throughout the history of his ministrations in the four Gospels in the New Testament. The chief moral which he inculcated was, 'Whatsoever ye would that men should do unto you, even so do unto them; for this is the law and the prophets.' But the whole of his sayings breathe a similar spirit of benevolence and gentleness. He preached, for the first time that it had been done on earth, the doctrine of 'peace and good-will towards men;' that is, universal love and peace among all mankind. 'Ye have heard,' said he, 'that it hath been said, Thou shalt love thy neighbour, and hate thine enemy: but I say unto you, love your enemies: bless them that curse you: do good to them that hate you: and pray for them which despitefully use you and persecute you.' Again, he said, 'Blessed are the poor in spirit, for theirs is the kingdom of heaven: blessed are they that mourn, for they shall be comforted: blessed are the meek, for they shall inherit the earth: blessed are they which do hunger and thirst after righteousness, for they shall be filled: blessed are the merciful, for they shall obtain mercy: blessed are the pure in heart, for they shall see God: blessed are the peacemakers, for they shall be called the children of God: blessed are they which are persecuted for righteousness' sake, for theirs is the kingdom of heaven: blessed are ye when men shall revile you, and persecute you, and shall say all manner of evil against you falsely, for my sake.' In this manner he taught the great necessity for being humble and lowly in spirit, as the basis of all virtue and social happiness. He likewise inculcated at different times the necessity of putting away everything like ostentation in doing good actions. He tells us not to give our alms before men, but to bestow them in secret; not to pray ostentatiously in public, but in a private place. No one until he appeared ever pointed out that there was no difference betwixt actual transgression and the wish to transgress. He tells us that sins of the heart are equally punishable with the commission of an offence. He likewise taught that men 'cannot serve two masters;' that is, do evil actions, however apparently trivial, and at the same time be good men. To break 'the least of the commandments' is to be reckoned equivalent to breaking the whole; and it is further said, it is impossible that our oblations to God can be accepted of so long as we live at enmity with a brother; that is, having a quarrel with any one. 'Leave thine offering before the altar, and go thy way; first be reconciled to thy brother, and then come and offer thy gift. Agree with thine adversary quickly whilst thou art in the way with him.' Who amongst us, may we ask, keeps this saying in remembrance? Do even all who attend the public worship of God most strictly and punctually hold it in mind?

Again, he says that we are equally to avoid hypocrisy, or a pretence of self-righteousness and ability to show our neighbours their faults, before we have put away the same or other faults from ourselves. 'Hypocrite, first cast the beam out of thine own eye, and then thou shalt see clearly to cast out the mote out of thy brother's eye. Judge not, that ye be not judged.' How valuable are these reproofs! Continuing to admonish us of the danger of hypocrisy, he says that we shall know men by their fruits; that is, we shall know them by their actions, not their words. 'A good tree cannot bring forth evil fruit, neither can a corrupt tree bring forth good fruit: therefore by their fruits ye shall know them. Not every one that sayeth unto me, Lord, Lord, shall enter into the kingdom of heaven; but he that doeth the will of my Father which is in heaven.' We are likewise told that there must be no stop to the extent of our forgiving of injuries. Being asked if we should forgive an injury for seven times, he said to those about him, 'I say not unto thee, until seven times, but until seventy times seven;' by which we are to understand that there is to be no limit to our forgiveness. Three things, we are told by St Paul, are essential—Faith, Hope, and Charity, but that the greatest of these is Charity, or a disposition to think well of our neighbours whatever may be their actions. It is also variously inculcated that charity is the first of the Christian virtues. Personifying it, it is said, 'Charity suffereth long, and is kind; charity envieth not; charity vaunteth not itself, is not puffed up, doth not behave itself unseemly, seeketh not her own, is not easily provoked, thinketh no evil; rejoiceth not in iniquity, but rejoiceth in the truth; beareth all things, believeth all things, hopeth all things, endureth all things.'

CONCLUSION.

We have now given an elucidation of what we consider to be the principal duties we are called on to perform during life, both to ourselves and to others. The subject is by no means exhausted, yet enough has been said to afford human beings a view of what line they ought to follow in the pursuit of individual and social happiness. The object we held in view has been accomplished. We have, to the best of our ability, put young and old, high and low, rich and poor, *in the way* of executing their temporal duties. We hope we have shown that if a man be not a happy, a grateful, a satisfied being, he must accuse himself, and not complain that the system of being to which he belongs is wrong and malevolent. We have attempted to prove that man, individually and socially, is capable of improvement; that he has removed himself from his original condition, and has advanced far in disclosing his own powers, and in applying them to the promotion of his own happiness. But it has to be added, that he has still much farther to go in the same course, that the way is known to him, and that there are no obstacles in it which he may not remove. We do not believe in the perfectibility of mankind. The crimes and follies which affect even the most cultivated of our race tell us too plainly that there is a natural bias towards evil, which it requires the utmost skill on the part of religion and reason to counteract. The passions ever seem to stand as a barrier against human perfection, and it is only by their due regulation that we can gain so much as comparative worldly happiness. Yet it is incalculable to what extent the exaltation of the mental faculties may be carried by education, and to what extent the community may be purified of its vices. Let us hope that nothing may occur to interrupt that physical, intellectual, and moral improvement of society which is now so happily in the way of advancement.

NOTE.—The preceding article was an abstract from the Moral Class-Book of Mr William Sullivan, a work published at Boston in the United States. The present is partly original, and partly selected from the same production. Excellent as Mr Sullivan's book is, it is singularly deficient in the inculcation of some of the principal public duties, and is in many parts adapted only for the perusal of American readers. The heads in the present sheet—Duties of Subjects, as Electors, as Jurors, as Masters and Servants, Conduct at Public Meetings, Making a Will, Misfortunes and Evils, Inequality of Rank, Duties which the People of one Country owe to those of Another, Duty of Trusting to Ourselves, Religious Obligations, and Conclusion, are original.

POLITICAL ECONOMY.

DEFINITIONS.

POLITICAL ECONOMY is the science which teaches the manner in which nations and individuals acquire wealth.

Wealth is anything which is capable of gratifying our desires, and of procuring for us by exchange some other object of gratification. Some objects are capable of gratifying our desires, but are incapable of procuring for us any other objects in exchange: such are air, the light of the sun, and commonly water. Others are capable not only of gratifying our desires, but of procuring for us other objects in exchange: such are fuel, cloth, salt, wheat, iron, money, &c. It is only articles of this latter class that are denominated wealth.

Value.—That quality in any object which renders it capable of gratifying our desires is called its *value*. Thus the value of air consists in its power to support life; the value of water consists in its capacity to slake our thirst, and in its utility in the several purposes in the arts; the value of fuel consists in its capacity to impart to us warmth, to cook our food, &c.

When this value is considered simply as a capacity to gratify human desire, it is called *intrinsic value*.

When it is considered as a capacity to procure for us something else in exchange, political economists term it *exchangeable value*.

Things which are everywhere abundant, and which require no aid from human labour to render them capable of gratifying our desires, have only intrinsic value. This is the case with air, the light of the sun, &c.

On the other hand, things which derive their power to gratify our desires from human labour, and which are found only in particular places, have always exchangeable value. This is the case with articles of food, clothing, metals, minerals, &c.

The reason why these latter have exchangeable value is evident. If I, by my labour, give value to something which had no value before, I have a right to the thing in which this value resides. And inasmuch as I have bestowed my labour upon it, I will not part with it for nothing. Hence if any one wants it, he must offer me in exchange something on which *he* has bestowed a similar amount of labour, or else something which I could not otherwise procure without bestowing upon it an equal or a greater amount of labour. Thus if I have spent an hour in catching a fish, I will not give it to my neighbour for nothing, or for air, or sunlight, which I can have for nothing. I will only give it for something which I could not procure with less than an hour's labour. And if he offer me something which I could procure with half an hour's labour, I shall not exchange, but shall prefer to procure for myself the article which he offers me.

And hence we see that when men exchange the products which they have procured with each other, they exchange labour for labour. Thus when men exchange silver for gold, they give a much larger amount of silver than of gold, because it requires much more labour to procure gold than it does to procure silver. Again, they give a much larger amount of iron in exchange than of silver, because the labour of procuring silver is much greater than the labour of procuring iron.

And hence we see that when men exchange with each other, the exchangeable value of anything will be, in general, as the labour which it costs to procure it. Hence the *cost* of anything, or its *natural price*, is the labour which is necessary to produce it.

This, however, is liable to accidental and temporary fluctuation. Sometimes a much larger quantity of a given product is created than is wanted. In this case the owner, in order to induce persons to buy, will offer it at a less price than the cost, because he had rather sell it at a loss than lose it altogether. When in this case the supply is too abundant, the exchangeable value will fall. On the other hand, when not enough of any given product has been created to supply the wants of the community, the buyers, rather than be deprived of it, will overbid each other, and thus will pay more than the natural price: that is, when the demand is unusually great, the exchangeable value will rise. These causes of fluctuation can, however, exist but for short periods; and the constant tendency of the exchangeable value of any ordinary product will be towards the cost of the labour necessary to create it.

Production is the act by which we give to any object its particular value, or its particular capacity to gratify human desire. Man can neither create nor annihilate anything; he can only change the form of that which is created. We cannot create iron, but we can extract it from the ore; we can then convert it into steel; we can change a bar of steel into knife-blades. Each of these acts, by which a particular value is given to the iron, is called an act of production.

The substance to which any value has thus been imparted is termed a *product*.

Capital.—The term capital is applied to the material before it has been changed by labour into a product; to the instruments with which this change is effected; to the means of subsistence by which the labourer is supported; and also to the product which results from the application of labour to the raw material.

Exchange.—Every man finds it for his interest to labour exclusively at one kind of production. Thus we see that every man has his own trade or profession. But a man wants a great many other things besides those which he produces himself. The shoemaker produces shoes; but he cannot eat, or drink, or clothe himself with shoes. Hence he must exchange his shoes for those articles which he needs. Every other man is in the condition of the shoemaker. And hence we see that an immense amount of exchanges must be made every day in every civilised community.

Distribution.—Not only does every man work at a particular trade—it is commonly the case that a great many men must labour together in order to create a particular product. Every penknife, nay, every pin, goes through the hands of several workmen, and receives a portion of its value from every one of them. When the product has been created, every one is entitled to his share of it. The principles by which this division of the profits is made, is called by political economists *distribution*.

Consumption.—Every product, after it has been created, is put to some purpose. Sometimes it is used for the creation of some other product—as wheat, when it has been raised, is used for the purpose of making flour; or again, it may be used for the simple purpose of satisfying human desire—as bread, when it is eaten, is used to appease our hunger. The destruction of values in this manner is called *consumption*.

The whole subject of Political Economy may therefore be comprehended under these four divisions—Production, Exchange, Distribution, and Consumption.

I. PRODUCTION.

Production has already been defined as the act by which we confer upon any object a value which it did not possess before; or it is the application of *labour* to *capital* for the creation of a product.

CAPITAL.

Capital is the *material* which is to be united with industry for the creation of a product, or the *instru-*

ments which are used in the act of production, or the *necessaries and conveniences* by which the health of the labourer is sustained. Sometimes the labourer finds the material in its native state, as the miner finds the ore or the coal in its native bed; most commonly, however, he receives it from another individual, who has already conferred upon it some value, and it is his occupation to confer upon it additional worth.

The forms of capital are as various as the different occupations of men. The *material* of the farmer is seed, manure, animals, &c.; that of the manufacturer, cotton, wool, iron, leather, &c.; and that of the merchant, the various substances in which he traffics.

The *instruments* with which these producers labour are very various. The farmer uses ploughs, harrows, and carts; the manufacturer, saws, hammers, and spinning and weaving machines; and the merchant, ships, boats, locomotives, and the like.

Besides these, all men require for their *sustenance* food, clothing, shelter, and the various conveniences of life. Viewed in this light, all capital may be included under one or the other of the following classes:—

Changes of Capital.—Inasmuch as the labour of men is so universally employed in changing capital having one form of value to capital having another form of value, capital must be incessantly undergoing changes. It is no matter how many changes it undergoes, if its value be at every stage sufficiently increased to pay for the labour which it cost to effect the change.

Increase of Capital.—If a given material undergo a change by which its value is increased, then there is an increase of capital equal to the *difference* between its former and its present value. I say equal to the *difference;* because, in the creation of one value, another value is always destroyed, and we are benefited, therefore, only by the superior amount of value which we possess over that which we have consumed to produce it. Thus the farmer consumes seed, manure, labour, sustenance, in the production of a crop. He has changed one kind of capital for another, and he is enriched just by as much as his crop is of greater value than all that it cost him to produce it.

Capital which is undergoing change by which its value is increased, or which is yielding an annual income, is called *productive capital*. That which is lying idle, and neither producing anything nor increasing in value, is called *unproductive capital*.

Money forms a small, but very important part of the capital of all civilised nations. The use of money is to enable us the more easily to make exchanges with each other. That it forms but a small part of the capital of a country is evident from the fact, that a very small part of the wealth of any individual consists of money. What is true of the separate individuals of a community must be true of the community collectively.

Fixed and Circulating Capital.—That capital from which the owner derives profit by changing its form or place, is called circulating capital; while the various instruments which he uses to produce this change, and from the use of which he derives profit, are fixed capital. Thus the wheat and the manures of the farmer, the wool and raw cotton of the manufacturer, are their circulating capital; the ploughs, harrows, barn, and land of the one, the machinery and buildings of the other, are their respective fixed capitals.

There is a constant tendency in a prosperous condition of society to change circulating into fixed capital. The farmer sells his wheat, and with the produce buys more land and better tools, or erects better fences and barns. The manufacturer, with his profits of this year, enlarges his manufactory; and thus, in the progress of society, vast sums are annually invested in roads, canals, manufactories, and various means of improvement.

The beneficial result of this tendency is easily seen. Fixed capital is but slowly consumed, hence the wealth of each generation is transmitted to the next; and, year after year, a country becomes better and better provided with the means for furnishing itself with all the conveniences of life. The superior conveniences which we enjoy in this country over those enjoyed by the aborigines who long ago occupied it, are owing entirely to the amount of fixed capital which covers the soil. It is thus that the results of the industry of men are transmitted to their posterity, and that the men of any one age are enabled to reap advantage from the skill, industry, and good conduct of the men of all ages who have gone before them.

INDUSTRY.

Of the Nature and the different Kinds of Human Industry.

Industry is human exertion of any kind employed for the creation of value.

If we consider the different kinds of value which it is in the power of man to create, we shall see that human industry may be employed in three different ways. Matter may be changed in its *elementary form*, as it is by the farmer when he plants seed and reaps an increase; or in its *aggregate form*, as when a carpenter fashions a piece of furniture out of a log; or in its *place*, as when a sailor carries it from one country to another. The ultimate design of all human industry employed in production is to effect either one or the other of these results. They are frequently, for the sake of distinction, denominated agricultural, manufacturing, and commercial industry.

It is evident that every one of these kinds of labour is absolutely necessary, in order to promote the convenience and happiness of man; and also that neither one could prosper without the aid of the others. Were there no agricultural labour, everybody would starve. Were there no manufacturing labour, everybody would be chilled to death. Were there no labour employed in transporting commodities from place to place, no one could enjoy any convenience except what he had produced himself—that is, though with great industry and suffering a few persons might live, yet they would be but few, and these few would be miserably poor. Hence we may see how unwise it is for any jealousy to exist between the farmer, the mechanic, and the merchant. All are equally necessary to each one, and each one is necessary to both the others.

But some men are neither mechanics, nor farmers, nor merchants; they are students, or philosophers, or lawyers, or physicians, or clergymen. All of these men, however, are necessary to society in ways that must be generally obvious, and are as well entitled to their rewards as any other useful class.

Of the Increase of the Productiveness of Human Industry by the means of Natural Agents.

By the productiveness of human industry we mean the amount of product which a human being in a given time can create. Thus if a farmer by one day's labour can raise one bushel of wheat, the productiveness of his labour is equal to one bushel; if he can, with the same labour, raise two bushels, the productiveness of his labour is equal to two bushels. If a cotton-spinner can spin one pound of cotton in a day, this is the amount of the productiveness of his labour; if he can spin ten pounds, this is the amount of it.

Now it is evident that the greater the productiveness of labour, the better is it for the industrious person and for all his neighbours. Every one knows that it is better for a farmer to own rich than to own poor land, because with a year's labour on the one he can obtain a much larger crop than on the other. It is, moreover, better for him that his neighbours also should have rich than poor land, because the richer their land, the larger quantity of *their* products will they be able to give him in exchange for *his* products. The great difference, therefore, between rich and poor land is, that rich land renders industry *more productive* than poor land.

The case is the same with the other modes of industry. He who spins with his fingers without any machine labours very unproductively—that is, in a day he can create but a small product: he who labours with a

spinning-wheel, labours much more productively—that is, with a day's labour he can create a much larger amount of product; and he who uses a still better machine, called a spinning-jenny, labours yet more productively—that is, in a day he can create twenty or a hundred times as much product as he could with a spinning-wheel. In every case, as the productiveness of labour increases, both the labourer and the community are benefited, just as a farmer would be benefited by exchanging a poor soil for a rich one. In both cases the benefit is the same—that is, with a given amount of labour he creates a larger amount of product, he receives better wages for his labour, and at the same time the community obtains his product at a cheaper rate. Hence it is that mankind have been, from the earliest ages, endeavouring to invent means by which the productiveness of human labour may be increased. And the condition of mankind is improved, from time to time, just in proportion as these endeavours have been made successfully. Every one knows how much the comforts of an industrious mechanic in this country exceed those of an uncivilised Indian; and the difference is owing to the fact, that the labour of the one is *so much more productive* than that of the other.

Now there are two ways in which the productiveness of human industry may be increased: these are, first, the *use of natural agents*; and, secondly, *division of labour*. Let us explain:—

Use of Natural Agents.

A *natural agent* is, as its name imports, an agent of nature, or any quality of things which we are able to use in order to accomplish our purposes. Thus it is of the nature of wood, when set on fire, to give off heat, and heat is the natural agent which we use for the purpose of cooking our food. It is of the nature of steam, when heated, to expand, and when suddenly cooled, to contract; hence steam is the natural agent by whose alternate expansion and contraction we create the force which we need to propel boats or machinery. So it is of the nature of water, when falling down from an elevation, to acquire a very considerable force; this force is the natural agent which we use to turn the wheel of a mill. So the peculiar quality of the magnet is a natural agent. The various qualities of medicinal herbs are also natural agents, though used for a different purpose from those mentioned above.

A *tool* or a *machine* is any instrument by which we are enabled to avail ourselves of the qualities of natural agents. Thus an axe is an instrument by means of which we make use of the cutting power of iron. A steam-engine is an instrument by which we make use of the expansive and contractile quality of steam.

In political economy, the principal use of natural agents is either to create or to use power or force, or, as we sometimes call it, momentum. Thus if a man wishes to row a boat, or chop wood with an axe, he must have strength or power with which to do it. The more strength or power he has, the more work he can do. Thus a man can do more work than a boy because he has more strength, or power, or force, to do it with. Now natural agents are capable of exerting this power, and by means of machinery we can direct the manner in which it shall be exerted.

The natural agents which we use for this purpose are of two kinds, animate and inanimate:—

Animate natural agents are beasts of burthen and draught—as the ox, the horse, the ass, the camel, the elephant, and other animals similarly employed.

That these very greatly increase the productiveness of human labour is evident. Every one knows how much more land a farmer can cultivate by means of a pair of horses than he could by his own unassisted strength, and how much more wheat a man can transport from one place to another with a wagon and horse than he could carry on his back.

The inanimate natural agents are, as we have said, the various qualities and powers of things by which we are enabled to accomplish our purposes. The most important and familiar of these are gunpowder, wind, falling water, and steam.

Gunpowder is used in war, in hunting, and in the blasting of rocks. For the latter purpose it is very valuable in the construction of canals, railways, &c.

Wind is used as a stationary agent in the common windmill; and as a locomotive agent in the propelling of vessels on the water. It is cheap, and for some purposes very valuable.

Falling water is used very extensively as a stationary agent in almost all works where great power is required. Almost all our nails are made, our wheat is ground, and much of our cotton is spun and woven by water.

Steam, however, is now used the most extensively for the various purposes of the arts, as it possesses many advantages over every other agent. It is capable of exerting any degree of force, from the least to the greatest; it may be used as a stationary or a locomotive power; it may be used on land or on water, and it may be placed perfectly under human control. Its only disadvantage is its expensiveness. Steam is now used to spin the finest thread and the stoutest cable, to weave muslins and to hammer anchors, to propel the largest vessels on our rivers and on the ocean, to draw our carriages, to saw and plane our boards, and in fact to accomplish almost all the purposes which require either great or unremitted force (See No. 25, Vol. 1.).

Inanimate agents are in general preferable to animate agents in most of the purposes for which power is required. The reason of this will be readily comprehended. For instance—

1. *They are cheaper.* A steam-engine of a hundred horse-power will cost less than the horses necessary to do the labour which it performs, and will cost much less to keep it at work.

2. *They labour without cessation*, while animals require much time for rest and refreshment.

3. *They are safer.* They have no passions, and hence may be governed by fixed and certain laws. A steam locomotive, for example, is neither liable to run away nor be frightened.

4. *We can use them without the infliction of pain*, while animals frequently, of necessity, suffer in consequence of hard labour or rapid driving.

5. They are capable of much more rapid action, hence there is a great economy of human time.

But this is not all. Men are able not only by the above means to create force, they are also able to devise machines by which the force thus created may be applied. Thus after a steam-boiler and cylinder have been constructed, we are able to create a force by means of steam; but we still need levers, and wheels, and cranks, in order to enable us to use it. When we have trained horses to draw, we still need wagons to enable them to draw with. All these machines, by which force is directed, are the various modifications of what are called in philosophy the mechanical powers. And by means of them we are enabled to wield the force which we have created in any manner that we choose.

Besides these agents for the creation of force, there are various other qualities of things which are of very great use in the purposes of human life. Thus, for instance, some of the metals, when heated, readily melt; and if in this state they are poured into a mould, they retain the shape of the mould with perfect precision. In this manner much human labour is saved, or a given amount of labour is rendered much more productive. Were it not for this quality of type-metal, every type must be cut by the hand. This would render types and books very expensive. But now we have only to cut a mould into the form that we wish, and if the melted metal be poured into it, the type is formed, by cooling, into the precisely corresponding figure. In this manner a single workman can make several hundred types in an hour. There are various other qualities of things which we use in a similar manner, but their number is so great that we have no room here to describe them. By reflection, every person may easily furnish himself with as many examples as he pleases.

Division of Labour.

In the preceding sections we have seen that the productiveness of human labour may be greatly increased, *first*, by discovering the various qualities of things, or, specially, those qualities by which we are capable of creating force; and, *secondly*, by those various contrivances by which the force thus created may be successfully directed and applied. We have one other source of increased productiveness yet to consider—it is division of labour—and its results are in many cases as striking as any that have been noticed.

Division of labour, in general, means employing one individual upon one kind of labour, instead of employing the same individual upon several kinds of labour. If we reflect, we shall see that this circumstance forms one of the leading distinctions between savage and civilised nations. A savage does for himself whatever he requires to have done. He is his own philosopher, inventor, and operative; his own farmer, butcher, baker, shoemaker, tailor, carpenter, &c. And the result is, that he is ignorant, hungry, shelterless, almost naked; and that he continues age after age without making any sensible improvement. On the contrary, civilised men divide these various occupations, so that one man labours wholly in one, and another man labours wholly in another employment; and the result is, that civilised men, without labouring more than savages, easily obtain convenient shelter, clothing, food, and all the necessaries of life.

But still more. Every one who observes any mechanical process, observes that it consists of several parts. For instance, in order to make a knife, the blade must be formed and then polished, the handle must be formed in several pieces, the rivets must be made to connect these several pieces together; and after these several pieces have been formed and prepared for each other, they must be united together into a knife. Now what is commonly called division of labour in political economy, consists in so apportioning this work that one person shall labour at only one part of any process.

The division of labour in this manner is found to have a much greater effect upon the productiveness of human industry than could possibly have been supposed. Every man who labours at a trade adopts this plan in part. If a cabinet-maker, for example, have a dozen tables to make, he will make all the legs of all the tables at once, then all the covers, &c. and when all have been prepared, he will put them all together. And if several men were to unite and make nothing but tables, and each one perform but one part of the labour, they could make a great many more tables in a given time than if each one made a whole table.

The principal reasons for this increased productiveness are as follow:—

1. It saves the loss of time and skill, which must result from frequently passing from one occupation to another. After a man has laboured for some time at one thing, he is said to have 'got his hand in,' and he performs the operation with ease and skill. If he turns to a different occupation, his 'hand is out,' and he cannot perform it so well. Hence all the time consumed in acquiring the habit is lost.

2. When a variety of operations is to be performed by the same individual, he must frequently adjust his tools, or pass from the use of one kind of tools to the use of another. This occasions a great waste of time. By performing the same operation continuously, the same tools with the same adjustment will answer the same purpose perpetually. This is specially the case where the adjustment of tools requires not only time but expense, as, for instance, in the use of the blacksmith's furnace. If the smith heat it, and leave it for the purpose of doing some other work, all the fuel consumed after he leaves it, as well as that necessary to bring it again to its proper temperature, is lost.

3. When men confine themselves to a single operation, they acquire a degree of dexterity and skill which could be acquired in no other manner. A man who only occasionally makes nails, may make about 800 or 1000 in a day; while a boy who has never done anything else, will make upwards of 2300 in a day.

4. Division of labour suggests the invention of tools and machines, by which labour may be rendered still more productive. As soon as an operation is analysed into its simple processes, it is comparatively easy to contrive some way in which to perform either one or all of these processes by a machine. It would have required great skill to construct a machine for making nails before the process was analysed; but let it be divided into rolling, cutting, and heading, and it is comparatively easy to construct instruments by which each of these processes may be accomplished.

5. There is great diversity in the talent required for performing the various parts of a process. Some parts of the operation require great dexterity, and a long course of education; others can be performed by women, and even by children, with very little training. Some parts may require labour worth four or five shillings, while others can be executed by labour worth no more than a few pence per day. Now without division of labour, all the processes must be performed by labour at the highest price. By judicious division of labour, the manufacturer can employ just the amount and just the kind of labour that he needs. This greatly reduces the cost of production.

The effect of all this is seen in the very low price at which almost all the articles of general use may be obtained. For instance, suppose a lady in New York wanted a dozen needles, and applied to a jeweller or other workman to have them made for her, she could not obtain them at much less than a shilling a piece. But needles are imported into that city from a British manufacturing town, and sold at about four for a halfpenny of our money, notwithstanding all the cost of transportation; and this entirely through the advantage derived from the division of labour.

1. But to this division of labour there is a natural limit. This limit depends upon several circumstances. For instance, a given process consists of no more than a certain number of operations. When it has been divided into as many parts as there are distinct processes, and one part is assigned to each individual, this is as far as division of labour can go. There would be no economy in any farther division.

2. Again, the practicability of division of labour depends upon the capital of an individual or of a country. A man must have accumulated some considerable amount of capital before he can carry on division of labour in any occupation. For instance, suppose that the division requires the labour of ten men, he must have materials and tools sufficient to employ ten hands. Nor is this all: suppose that it take ten days to finish his product, he must have material sufficient to employ them during all this time before he receives anything in return for that product. And if it take a fortnight more before he is able to sell his goods and obtain a fresh stock of material, he must have a capital sufficient to employ them during this time also. It is for this reason that manufactures do not commence with the first settlement of a country, but they must always be delayed until capital accumulates before they can be successfully established.

3. Division of labour can only be carried on where there is sufficient demand for a product to consume it as fast as it is manufactured. If it would take *ten* men to manufacture pins by division of labour, but only so many pins could be sold as could be made by *one* man, the labour could not be divided. This, however, depends upon several other circumstances. For instance, the demand depends upon the number and the wealth of a community. There is a larger demand for hats in a town of ten thousand inhabitants than in a village of one hundred inhabitants. There is also a greater demand for hats among a thousand rich men than among a thousand beggars. This is another reason why division of labour and manufactures naturally increase with the growth, and age, and wealth of any country,

And hence we see why roads, canals, and railways are so beneficial to the industry of a country. By reducing the cost of transportation, they render the price of any commodity as low at one hundred miles distance as it frequently was before at ten miles distance from the place of its manufacture. Hence facility of transport increases the number of consumers, and by thus increasing the demand, renders practicable the division of labour in cases where before it was impracticable.

Again, it is evident that demand must be greatly affected by the cost of the article manufactured. Costly articles are purchased only by the rich. But the rich are only a small part of the community. Hence the demand for such articles is but small. It is those articles which every one wants, and which every one can buy, that create such a demand as will enable them to be made at the cheapest possible rate. Hence we see that division of labour, and the reduction of price which it occasions, benefits the poor much more than it does the rich. I do not suppose that jewellery, trinkets, rich laces, are much, if at all, cheaper than they were twenty or thirty years ago; while cotton cloth, hardware, woollen goods, and all the manufactured necessaries of life, have fallen in price from one-half to three-fourths. This is an immense benefit to those of us who are obliged to spend our money for necessaries and comforts, and have none to spend for trinkets.

Of the Benefits of Increased Productiveness of Labour.

The prime object of labour, as every one knows, is to procure the means of happiness. A farmer labours to produce wheat, rye, fruits, &c.; a cotton manufacturer to produce clothing, and a shoemaker to produce shoes, and so of any other case.

Now the greater the productiveness of labour, the greater are the means of happiness which the individual by a given amount of labour produces. If a farmer expend a year's labour upon a rich soil, his labour is more productive than if he expended it upon a poor soil; that is, with the same labour, he produces in one case say five hundred bushels of wheat, and in the other case only two hundred bushels. Every one must see that this is an advantage; and every one would rather own one hundred acres of good soil than one hundred acres of poor soil.

Now if a poor soil can, by means of manure, or in any other manner, be changed into a fertile one, the result is the same as if, by means of improved tools, a farmer were able by one day's labour to produce twice as much as he could produce before.

Now this principle applies just as much to a manufacturer or any other labourer as to a farmer. Suppose a carpenter, when he first commences learning his trade, could not make more than one table in a week, his labour would be very unproductive. As he becomes more and more skilful, he can make a table in less time; and at last, when he can make a table in a day, his labour is six times as productive as it was before, and he has the means of procuring for himself six times as many comforts with the same amount of labour. Further, if he be able, by means of a turning-lathe, or a steam-engine, or by division of labour, to make two tables a day, his labour will be still more productive, and he will be able to procure for himself a corresponding greater amount of conveniences.

So if men spun by hand and wove by hand, were this possible, a man could produce but very little thread and very little cloth. His labour would be in the lowest degree unproductive. But if he invent a spinning-wheel and a loom, his labour becomes at once vastly more valuable, and he can produce ten or twenty times as much as he could before, and he is able to provide himself with a much greater portion of the necessaries and comforts of life. If now we furnish him with a spinning-jenny and a power-loom, his labour will be still more productive; and as he creates, with a given amount of labour, a greater amount of the means of happiness, a larger portion will fall to his own share—that is, he will be both richer and happier. And facts demonstrate that such has always been the result. The labour of the Western Indian or the Eastern Hindoo is without machinery and without division, and it is of course very unproductive. Hence *he* is very poor. The whole wealth of the Indian is a blanket and a bow and arrows, and the whole wealth of a Hindoo is a pot of rice and a cotton cloth. How different is the condition of the labourer in this country!

And we also see that it is not beneficial merely for one individual to increase the productiveness of his labour; it is beneficial to the whole community that the sum-total of industry should be as productive as possible. Would it not be a benefit if the crops of corn, and wheat, and cotton, and rice, the products of the fisheries, of the mines, and of the manufactories, during the next year, should with the same labour be doubled, so that we might by a day's labour procure twice as much bread-stuffs, fuel, clothing, and every necessary and comfort of life, as we are able to procure at present? Now the whole effect of the increased productiveness of labour, by means of machinery and of division of labour, is to bring about precisely such a result.

And yet more—the benefit of this change is specially realised by the labouring-classes. A nobleman in Great Britain is by no means as much better off than his ancestor, as a common labourer in England now is better off than a serf at the period of the feudal oppression and ignorance. The rich and powerful in all countries always have an abundance of comforts and luxuries. Comparatively, they are but slightly benefited by improvement in the productiveness of labour. It is the labourer who is chiefly benefited, because every improvement brings within his power some convenience which was before out of his reach. What difference does it make to a man worth a hundred thousand a year whether coal costs one or five pounds a ton, and cotton cloth fourpence or two shillings a yard? At either price he would be able to procure an abundance. But to the man who is worth but fifty or a hundred pounds a year, the difference of price is a matter of immense consequence; inasmuch as at one price he would be able to supply himself abundantly, and at the other price he would be able to supply himself but very scantily, if he were able, indeed, to supply himself at all. Hence we affirm that improvements in machinery, by which the productiveness of labour is increased, are specially for the benefit of those classes who are obliged to work for their living.

The only objection to all this is, that by increasing the productiveness of labour we diminish the demand for labour, and that hence labourers are thrown out of employment. This deserves a brief consideration, inasmuch as it has led not only to erroneous views in theory, but to practical wickedness in action.

To settle this question, let us examine the facts. What are the manufactures which now employ the greatest number of workmen, and in which the number of workmen has within the last twenty years the most rapidly increased? I think that any one will answer, the cotton and the iron manufactures. But if we were asked in which branches of manufactures has labour-saving machinery been most extensively introduced? we must also answer, the cotton and the iron manufactures. Or we may come to the same result if we compare the linen with the cotton manufacture. Machinery has been introduced only in a small degree into the manufacture of the one, and very extensively introduced into that of the other. The consequence is, that the labourers in linen are very poorly paid, and are diminishing in number, while the labourers in cotton are well paid, and are every year rapidly increasing. These facts are abundantly sufficient to teach any person what is the natural result of the use of machinery.

The reason of this is easily seen. Suppose that only 10,000 yards of cotton *could be used* in a given district, and it required 100 men to make them. If these 10,000 yards could be made by 50 men, it is evident that 50 men would be thrown out of work. But suppose that by this change in the mode of labour, the cotton cloth

which was sold at 2s. could be sold at 1s., so that twice the *quantity* could be used, and 20,000 yards were wanted, there would be a demand for just the same number of workmen as before, so that the workman would be just as well off as he was before. But suppose that when cotton was at 2s. a yard, only those worth £200 a year could afford to purchase it, while now that it is at 1s., those worth only £100 per annum can become purchasers. The number of persons in a community worth £100 a year is more than double that of those worth £200. Hence this class alone would create a demand which would place the labourer in as good circumstances as he was before. But to this must be added the demand of those worth £120, £150, and £200; and it must be remembered that each one of these classes will now use more cotton cloth than the class of £200 did formerly. To this must also be added the fact, that by the reduction of price, cotton cloth may be used for many purposes to which it could not formerly have been applied. All these circumstances taken into the account, will show us how it is that the greater the productiveness of industry, the greater will be the wages of labour; and that the more extensively labour-saving machinery is introduced into any department, the greater will be the demand for labourers.

But this is not all. While the labourer is thus benefited in his wages by the use of machinery, he, and every other person, is equally benefited in another respect. We have seen that by this means every product is rendered cheaper. Every one knows how much cheaper woollen and cotton goods, carpets, books, and most of the necessaries of life are than they were a few years since. Not only are they cheaper, they are also better and more elegant. Calicoes, crockery, the various fabrics for wearing apparel, paper-hangings, and many other things, may be procured at a very reasonable price, and of great beauty of appearance. These benefits the labourer shares with the rest of the community. Hence his share of the advantage is doubled. His wages are raised, and the price of what he purchases with them is reduced. The rich man receives no higher interest for his money than before—that is, his wages remain the same: his only advantage is, that with the same money he can procure what he wants at a cheaper rate, or in greater abundance.

OF THE CONDITIONS OF SOCIETY FAVOURABLE TO PRODUCTIVENESS.

It is essential to the promotion of industry that a man should enjoy the reward of his labour. Every man must be allowed to labour as diligently as he can, and to use as he pleases all that he has gained, provided that he use it innocently.

For these purposes it is necessary that all the property in a community be divided. By this it is meant that everything belongs exclusively to some one. In the first place, the land must belong to particular persons, otherwise it will not be tilled at all. We see this principle strikingly illustrated in the condition of a country inhabited by savages, and also in the state of most *commons*, wherever these exist. No one having any particular interest in the cultivation of any part of a country occupied by savage tribes, no part is cultivated. Were any one to cultivate a patch of such land, he might have his right to the crop disputed, and lose the benefit of his labour. It is impossible for men to exert industry under such circumstances. With a common, again, no one has so great an interest as to induce him to keep the ground in order; hence such pieces of ground generally become nearly waste and useless. The principle may be still more familiarly illustrated.—Suppose a cherry-tree growing in a hedge-row, and no one's property in particular. No person will take pains to protect the young fruit of that tree from the birds by means of network; and every cherry which the birds spare will be taken before it is ripe by idle children. There will be no public benefit of any kind from such a cherry-tree. But suppose the tree to become somebody's property. It will then be cared for and protected; the fruit will be allowed to ripen, and become in due time a source of enjoyment as far as it will go.

It is not enough that property be divided; the right of property must also be *protected*. By the right of property, we mean the right which any man has over what is his own. Thus if a man make a table out of his own materials, he has a right to keep that table, or to sell it, or to use it as he pleases, and no one has a right to take it from him, or molest him in any manner in the use of it. And it is the same thing if he have bought the table, or procured it in any honest manner by exchange.

Now it is the business of every man in the community to see that no man interferes with any other man's property. This is what we call the protection of the right of property. The whole community have committed this power to the legislators, judges, &c. who are called the government. Hence we see that it is the special business of government to protect individuals from violation of the right of property.

The right of property may be violated by *individuals*, as in the cases of robbing, stealing, housebreaking, &c. Were this allowed, no one would labour at all, because no one would labour for the sake of seeing his property plundered and wasted by thieves and robbers. The case is the same when property is plundered and destroyed by mobs. If a man would not labour for the sake of seeing his property destroyed by one robber, he would not labour any the more for the sake of seeing his property destroyed by five hundred robbers.

Hence it is clear that the industry of a country depends very greatly upon the goodness of its laws and the faithful execution of them. If laws allow of violation of property, all men would soon become thieves instead of labourers; and as thieving produces nothing, there would soon be nothing left to steal, and all would starve. And if the laws be not put into execution, there might as well be no laws, and the result would be the same.

But governments themselves sometimes violate the right of property. This is the case when, by the mere will of the government, the property of the individual is taken for any purpose whatsoever. Such is the case in many despotic governments. When this is the case, a people becomes at once dispirited and indolent. Who would labour on the soil through a whole summer, if he knew that he was liable to have his harvest seized in the autumn by a tyrant as soon as it was fit to be gathered? Thus we see that the most fertile regions of the earth, when under such a government, lie almost uncultivated; the inhabitants are few, and these few are extremely poor and spiritless. Hence the importance of a good constitution of government.

But suppose that every man be allowed to gain all that he can, he must also be allowed to *use it as he will*. This is evident, because no man will be industrious to gain property, unless he be allowed to use it for the promotion of his own happiness in such way as he likes best. A man's property are his faculties of body and mind, or his means of industry, and his property or capital. It is necessary, in order to render men industrious, that they be allowed, provided they do it honestly, to use both of these as they choose.

For instance, the labourer should be allowed to work at any trade or as many trades as he pleases, to work in any place that he chooses, and to change his occupation whenever he supposes it can be done for his advantage; he should also not be obliged to change it unless he believe such change will be for his benefit. It is to be supposed that every one understands his own business better than any one else can understand it for him, and therefore to oblige him to make any change contrary to his own wishes will do him an injury, and an injury which is wholly without excuse.

And the same is true of *capital*. Every man that owns anything has a right to use it as he pleases. No one, whether an individual or a government, has any right to direct him in the manner in which he shall employ it. A farmer has a right to raise just such a

trap as he pleases; and a merchant to buy and sell what he chooses, and at such prices as he sees fit. He may ask too much, and may impose upon his neighbours; but if he do so, he will soon punish himself. And though he thus acts ignorantly and wickedly, yet as we cannot control him without interfering with the right of property, it is much better to let him alone, than for the sake of regulating *him*, to oppress *all the other men* in the community, and thus, for the sake of punishing *one* bad man, to injure *a hundred* good men.

Another condition of society favourable to productiveness, is the intelligence of the people. If they be ignorant, they neither are sensible of the importance of industry, nor know how to exert themselves to the best advantage. It thus becomes of great consequence that all should be, to a certain extent at least, enlightened by knowledge.

IL EXCHANGE.

We have thus far considered production, and the means by which, with a given amount of labour, production may be increased. But were this all, the happiness of man would be but in a small degree increased. Were a man to make everything for himself, or, what is the same thing, have nothing but what he could make himself, though his labour were ever so productive, he would enjoy but very few comforts. Though a farmer, instead of raising a hundred bushels of wheat, could raise three hundred bushels, yet if he did not need for his own consumption more than a hundred, and could not procure anything else with his additional two hundred, he would be no better off than before, but might as well suffer this additional product to rot upon the ground. His additional labour would bring him no additional advantage, and hence there would be no encouragement to labour. But as soon as he is able to exchange this two hundred bushels more than he can use himself for some other things which he wants, his additional labour brings with it a corresponding reward; and additional productiveness of labour brings with it additional comforts and conveniences. Of so great advantage to mankind is exchange. Hence it will be seen that the prosperity of a country, its wealth and its industry, are very much in proportion to its facilities for exchange. Thus we see that no country can easily become rich without available harbours on its coast, good roads, canals, and railways in its interior; and that its advantages are greatly increased when it is so fortunate as to be penetrated in many directions by navigable rivers. We shall now proceed to consider the nature and principal laws of exchange:—

OF THE FACTS IN OUR CONSTITUTION WHICH RENDER EXCHANGE UNIVERSALLY NECESSARY.

1. It is a well-known fact that labour is necessary in order to render anything valuable. Everything valuable around us will, if we reflect, be seen to be the result of the labour of some one. And we have also seen that he who has laboured has, by means of that labour, acquired a right to the value which he has created. By this we mean that he has a right to do with it just what he pleases.

2. It is also the fact, that every man seems disposed to pursue some one kind of occupation in preference to another. One man chooses to be a sailor, another a farmer, another a mechanic, another a manufacturer, and another a merchant. And we also see that these different men seem each one to be the best adapted to that kind of business which each one has chosen. And we know that, by the principles of division of labour, there will be a much larger amount of product created when every individual has a separate employment, than when every man is obliged to distribute his time and energies between a dozen employments.

3. But while every man is thus intended to labour at one particular employment, and to produce *one* particular thing, every man needs for his comfort and convenience *a thousand* things. Now, as he labours to produce only *one* of these thousand things, he must procure all the rest by exchange; hence, in order to gratify his desires, he must make nine hundred and ninety-nine exchanges. By so doing he is able by labouring to produce one kind of value, and then by exchange to supply himself with every kind of value that he wishes. In this manner men are rendered happier, inasmuch as every one is enabled to pursue the occupation that he likes best, and at the same time to procure whatever he needs for his happiness. And moreover, by this mode labour is much more productive, every one procures a much larger quantity of what he desires by the same amount of labour.

We thus see that in order to secure our physical happiness, there is really as great a necessity for *exchange* as there is for *production*. This rule applies equally well to nations as to individuals. No nation is able to raise within itself one-half of the productions necessary to its convenience. It may have, however, peculiar advantages for producing some one or two articles of general necessity. These are commonly called its 'staples.' Now it is for the advantage of a nation, as well as of an individual, to devote itself to the production of that which it can produce in the greatest abundance and with the greatest ease, and then to procure by exchange with other countries those articles which it needs, but which they produce with greater ease and in greater abundance. The benefits in this case are of the same nature as in the former. Each nation labours in that department of production which it chooses; and at the same time, by so doing, it is enabled in greater abundance to avail itself of the productions of every other country.

Since there is so great an amount of exchange which must of necessity be made, it is evident, from what we have said on the subject of division of labour, that there will be a great saving of labour—that is, the labour of the whole society will be much more productive, if some portion of the community devote themself to the business of conducting exchanges. Thus if there were in a given town a hundred families engaged in the various kinds of production, and requiring for their own convenience a great many exchanges with each other, it would be a great saving of time and labour if some individuals should give up all other business, and employ themselves entirely in the business of exchanging. They would then receive the various products of the different producers, keep them on hand, and offer them in barter to such as wanted them, and they would carry the productions of the town to a city, and exchange them for what might be wanted by their friends at home. It may be easily seen that such an arrangement would be a great convenience.

Such arrangements are always made wherever men are industrious and frugal, and hence have anything to exchange. The men who thus employ themselves in exchanges are called merchants, and are usually spoken of in the language of commerce as retail and wholesale merchants:—

Retail merchants purchase in large quantities of importers or wholesale merchants, and sell again to consumers in such quantities as they may desire. In doing this they greatly benefit all parties. The wholesale dealer could not afford to break open a barrel of sugar to sell a pound, unless he charged a very high price for his trouble. The consumer could not afford to purchase a bag of coffee, or a barrel of sugar, or a whole piece of broadcloth. And besides, a man is rarely a judge of the goods he wishes to purchase, and it is much better for him to use the skill of a good judge than to attempt to judge for himself.

The *wholesale merchant* imports in large quantities from abroad, or purchases in large quantities from the manufacturer at home, and sells to the retail merchant, who, as we have said, sells to the consumer. The importance of this kind of labour in exchange is as evident as the other. The retail merchant could not import from abroad in so small quantities as he wishes to

purchase, unless with much additional expense. One wholesale merchant could import as much as would supply a large number of retail merchants, and with but very little more labour than would be demanded of every individual who only imported the small quantity which he needed for his own sales.

The interest of the merchant requires that he should buy as cheap as possible, that he may sell as cheap as possible; for the cheaper he sells, the more numerous will be his customers. Hence the wholesale merchant will export what he can export cheapest, will exchange his export where he can do it the most to his advantage—that is, where he can procure what is most wanted at home, and where he can do it at the lowest rates. So the retail merchant knows that the better his goods are, and the cheaper the rate at which he sells them, the greater will be the number of his customers, and the greater the number of exchanges which he will be able to effect within a given time.

Hence we see that the real interest of the merchant and that of the whole community are the same. The retail merchant can become rich in no other way than by purchasing as cheap as he can, that he may be able to sell as cheap as he can; for if he sell dearer than his neighbours, no one will buy of him. And so the wholesale merchant can grow rich in no other way than by sending abroad what is cheapest at home—that is, what is least wanted there, and bringing back what is dearest at home—that is, what is most wanted there. Thus we see that if merchants conduct their business correctly, they cannot grow rich in any other manner than by doing a real service to the community in which they carry on their transactions.

SOME OF THE PRINCIPAL FACTS IN REGARD TO EXCHANGE.

1*st*, In making exchanges with each other, men proceed upon the principle of exchanging labour for labour. What men can procure without labour, they will give away without demanding labour for it. What they have to labour a day in order to procure, they will not exchange for anything which they could procure by labouring half a day. And thus, in general, when one product costs more than another, it is because it requires either more labour, or more skilful labour, than the other to produce it.

Here, however, we should always bear in mind the nature and effect of accumulated labour. If a man labour six months upon a wind-mill, this wind-mill represents the labour and skill of six months accumulated in one machine. If he use this mill for grinding flour, he is entitled not only to the price of his labour per day, but also to remuneration for the use of his accumulated labour. Now all machinery and erections, all fixed capital of every kind, railways, canals, &c. are so many forms of accumulated labour; and it is manifest that for the use of this labour, as well as for the daily labour by which it is put into operation, the owner is entitled to a fair remuneration. And also it is evident that if capital be left free and unencumbered, this kind of labour will, by competition, be brought to yield, like every other species of capital, no more than its proper and fair recompense.

While this, however, is true in general, it is also true that the exchangeable value of all articles is liable to sudden and limited variations in consequence of the variations of supply and demand. In such cases sometimes an article will bring more, and at other times less, than the cost of the labour necessary to produce it. These, however, never can continue long, and they in the end equalise and compensate for each other; so that they do not at all invalidate the general assertion, that when men exchange, they exchange on the primary principle of labour for labour.

2*d*, The exchanger, or merchant, confers no new value on a product, he only saves labour and time to the producer. The article which a merchant buys is not changed in any manner by his labour. He who sells penknives, or calicoes, or sugar, or coffee, sells these articles just as he receives them. And so of the articles which he purchases to export in payment for them. Nevertheless, he is still performing a service of great advantage to the community. Were the farmer, who wanted a scythe, obliged to carry his wheat to the *scythe manufacturer*, and exchange it himself, his scythe would cost ten times what it costs at present. The case is still stronger, if he were obliged to go to Sheffield or Manchester to procure the hardware which he wanted. Hence although the merchant does not himself add any new value to his wares, yet by reducing the cost at which they must otherwise necessarily be procured, he does as great service to the community as those who actually produce. He enables other persons to produce twice as much as they would be able to produce otherwise, and this is the same thing to the community as though he were the producer himself.

3*d*, Hence it will be seen that the more rapidly exchanges are made, the better it will be for the merchant and for the community. It will be the better for the *merchant*, because he thus, with the same capital, makes a greater number of exchanges in a given time, and thus makes a greater annual profit, while he charges a smaller advance upon each exchange. Hence it is better for the *community*, because the less the advance which he charges, the less is the price which they are obliged to pay for what they purchase. Thus we see that, in prosperous times, trade is brisk; that is, exchanges are made rapidly, and with the greatest advantage to both parties.

4*th*, There are three circumstances on which the frequency and infrequency of exchanges depend:—

1. *The Intelligence of a People.*—Every one has a desire for the various means of happiness which God has spread around him, if he know what they are, and how he shall obtain them. Every one who has read the voyages of the early navigators, must have seen how eager the inhabitants of the newly-discovered islands were to exchange, as soon as they beheld the various instruments, and tools, and ornaments of civilised men. And thus we see that newspapers, travelling, and all the ordinary means by which information is circulated, have a great effect in increasing the desire of men to improve their condition by means of exchange; and that they are thus induced to labour more industriously, in order to procure something to offer in exchange for what they want.

2. *Productiveness of Industry.*—It is not enough that a man be desirous to exchange; he cannot gratify that desire unless he be able to offer something to the other party which will be accepted in barter. If I desire a barrel of flour ever so much, I can never obtain it unless I am able to offer to the flour merchant something which he will accept in exchange for his flour. Thus every one knows that a rich man is able to make a great many more exchanges in a year than a poor man. A labourer who earns high wages can make many more exchanges in a year than a labourer who earns but low wages. A farmer buys many more articles of comfort—that is, makes many more exchanges—in a productive than in an unproductive season. And thus in general every one must observe that a wealthy country makes more exchanges, both internal and external, than a poor country; a prosperous than a declining country; and the same country in a period of successful than in a period of unsuccessful industry.

3. *Moral Character.*—Men do not always exchange their products at the same instant, but one or the other frequently waits some time for the return which he is to receive in exchange for his product. This gives rise to a liability to dishonesty. And besides, when men are dishonest, they will frequently cheat each other either in the quantity or in the quality of the article which they offer in exchange. Now where these liabilities exist, they will greatly lessen the number of exchanges. No one who can help it will have any dealings with a rogue. Hence when men are disposed to be rogues, exchanges will diminish. Laws are made to oblige rogues to act like honest men; hence when laws are just, and are well administered, exchanges

will be more frequent than when they are unjust, partial, and unfairly administered. But every one must see that on the moral character of a people, not only their personal honesty, but also the soundness and efficiency of their laws, depends. Hence we observe that morality, using this word in its most extended sense, is of the greatest importance, not only to success in production, but also to success in exchanges.

And the same principles apply to our exchanges with foreigners. If we treat them justly and kindly, and allow them all reasonable means for enforcing their rights, they will come and exchange their products for ours, in preference to going to another country where they would be less favourably treated. Thus we shall be able to procure, on the most favourable terms, whatever we need from other nations, and in this manner reap the richest reward for our industry and moral character. A selfish, exclusive policy is as self-destructive a policy for nations as it is for individuals.

And if this be the case, we shall easily determine what are the causes which naturally diminish the frequency of exchanges, or which produce stagnation and derangement in business.

If the *desire* for any particular product diminish, the *demand* for it will diminish; hence those who produce it, and those who keep it for sale, will be unable to sell it. Thus the changes in fashion frequently destroy in a short time the entire demand for an article which a year ago was in vogue. Or the diminution of the intelligence of a country will in due time produce the same effect on exchanges generally.

The diminution of production during a single year will produce the same effect for that year; and oppression, heavy taxation, or anything which interferes with production, or diminishes the productiveness of human industry, will accomplish the same result permanently. And hence it is that as a nation becomes vicious, unjust, or oppressive, such moral deterioration must produce a diminution of exchanges, in the same manner as it interrupts all other kinds of industry. And thus success in exchange, as well as success in production, depends in a great measure upon the intellectual and moral character of a people.

From what has been said, it will be easy to perceive in what manner a government can best *promote* the business of exchange. It is by promoting the intelligence and virtue of a people—by giving every facility for the increase of the productiveness of industry—by encouraging, in every suitable manner, the establishment of roads, canals, railways, and means of internal communication—by rendering its harbours and coasts as easy of access as possible—and by giving to foreigners every reasonable facility for the transaction of their business when they come amongst us. In other words, by conducting its business, both internal and external, upon principles of the most perfect fairness and freedom.

And we see also what measures are in their nature most likely to *diminish* the number of exchanges. Such are duties on imports, or, in other words, adding to the price of every foreign commodity offered in exchange, obstructing the means of intelligence, refusing the necessary facilities for constructing means of internal communication, imposing unnecessary disabilities upon foreigners, neglecting the condition of harbours and coasts, and in general any course of measures by which the article offered in exchange is rendered more expensive, or by which the person who comes among us for the purposes of exchange is denied any reasonable means for seeking his own interest or happiness.

[Of exchange by means of money, metallic and paper, a full exposition is presented in the following sheet entitled COMMERCE—MONEY—BANKS.]

III. DISTRIBUTION.

We have thus far considered the mode in which wealth is, in the first instance, produced, and in which, in the second instance, the producers are best enabled to exchange it with each other.

It is, however, commonly the case that an article of production is not the result of the labour of one man alone, but of several men united. Thus several men successively unite in producing a barrel of flour. One owns the land on which it is grown, another sows the seed, another reaps the harvest, another owns the mill in which it is ground, another manages the mill for the owner, another makes the barrel in which it is contained, another transports it to market, and another sells it to the consumer. Now every one of these must be paid out of the barrel of flour when it is purchased by the consumer; that is, the price of the flour must be so *distributed* among them all, that each one has his just share of the proceeds. The principles on which this is to be done are considered by political economists under the head of DISTRIBUTION.

As all value is the result of capital and industry, it is manifest that we shall comprehend the whole subject, if we treat of *Wages*, or the price of labour, and *Interest*, or the price of capital. Inasmuch, however, as *Capital in Land* is in some respects peculiar, we shall consider it separately under the head of *Rent*, or the price of land.

WAGES, OR THE PRICE OF LABOUR.

Of the General Principles by which Wages, or the Exchangeable Value of Labour, is Regulated.

We have already seen that exchangeable value is the cost of anything, influenced moreover by the effect of supply and demand. We shall therefore consider, *first*, The cost of labour; and *secondly*, The effect of supply and demand upon it:—

I. Of the Cost of Labour.

Of Simple Labour.—By simple labour we mean that labour which may be performed by any healthy person without any, or with very trifling, previous education.

1. But it is evident that no person can continue in health without food, clothing, and shelter. We cannot, therefore, procure the labour of any living thing without furnishing those necessaries which are required for the continuance of existence. This is the first thing which enters into the cost of labour.

2. But besides this, human beings are not qualified to labour until they have attained several years of age. During the period of infancy, they must be supported by the labour of others. Were they not so supported, the whole race of man would in a few years perish. The cost of labour must therefore be sufficient to sustain not merely the parents, but also the children. And yet more, men live frequently after they have ceased to be capable of labour. The old must be supported, or they will perish. Hence the wages of labour should be enough to enable the labourer to lay up something to support him in his old age, or else the wages of his children should be sufficient to maintain him after he has become unable to maintain himself.

3. While, however, this is the fact, yet it may be observed that the cost of labour, or the remuneration necessary to accomplish these purposes, will vary in different climates. In warm climates, where vegetable food is principally used, and where very little expenditure is required either for fuel, clothing, or shelter, wages would naturally be lower than in cold climates, where the expenditures must of necessity be so much greater. This is, however, equalised by the fact, that warm climates enervate the system and relax the physical energies; so that, while you pay a very small sum for a day's work, you receive a corresponding small amount of labour in return.

Such is the natural cost of simple labour, and it will be generally found that by this rule that cost is practically adjusted. Whatever may be the condition of the country, the lowest class of labourers earns but simply sufficient to procure the ordinary necessaries of life for the parents and the children.

Of Educated Labour.—But for most of the occupations of life some sort of education is required. No man can

be a carpenter, or a blacksmith, or a jeweller, or a physician, or a lawyer, or a clergyman, without being educated for the particular calling which he intends to pursue. Now this education is expensive. It costs both time and money. If a man wish to practise a trade or a profession, he must spend several years in preparation or apprenticeship. During the whole of this time he receives no wages, and frequently is obliged to pay for tuition. When he has acquired the necessary skill, he is able to perform more valuable labour than before, and he is entitled to a higher compensation. This compensation would naturally reasonably be adjusted by a consideration of the time and capital which he has expended in his education. The longer the time, and the greater the expense of his training, the higher ought to be his wages. It is evident that the wages of such trained labour must be always greater than those of simple labour, otherwise it will not be produced. No man will spend money in educating his son for a profession which will yield him no higher wages than he could earn without any education.

Such are the principles by which the cost of labour is adjusted. Wages must always be sufficient to support the labourer, and to remunerate him for the expense which must be incurred in acquiring the skill necessary to the practice of his profession.

II. Of the Demand for Labour.

We shall consider this under two divisions—*first*, The demand for simple labour; and *secondly*, The demand for educated labour.

1. The demand for simple labour, or that which is indispensable to the production of the ordinary necessaries of life, is incessant and universal. Every man requires, either indirectly or directly, the labour which is employed in producing the ordinary articles of consumption for food, clothing, and shelter.

But in order to render this labour available, it must be united with capital. Neither labour nor capital can produce anything alone. Hence he who possesses capital is always desirous to unite it with labour, and he who is able to labour is always desirous to unite that labour with capital. And it is evident that the larger the amount of capital which a man possesses, the greater will be the amount of labour which he will wish to procure. He who cultivates five hundred acres of land will require a larger number of workmen than he who cultivates but fifty acres. The iron founder who wishes to manufacture five hundred tons of iron will require a greater number of workmen than he who wishes to manufacture but fifty tons. And hence in general we see that the greater the amount of capital, the greater will be the number of labourers required—that is, the greater will be the demand for labour.

If the capital of a country be too great for the number of labourers, there will be a competition between capitalists for labour. They will overbid each other, and thus the price of labour will rise. Those of the first class will be insufficient to supply the demand for labourers of this class, and a number of labourers must therefore be taken from the second class. And thus in succession every class of labourers will be raised one grade. The price of labour will thus be raised throughout the whole community, the condition of the people will be meliorated, a smaller proportion of children will die, and a larger number of labourers will be reared. If the addition from this natural source do not supply the deficiency, labourers will then immigrate from less favoured countries, where the proportion of capital to labour is less.

On the contrary, where the proportion of capital to labour is small, there will be a larger number of persons desirous of labour than can find employment. In this case there will be a competition among labourers for work. They will underbid each other, and thus the price of labour will fall. The case mentioned in the last paragraph will then be reversed; the condition of all the labourers will be rendered worse, and many will either emigrate or starve. Many children and weak and sickly persons will die of the diseases consequent upon insufficient nourishment and exposure. In this manner the number of human beings will be reduced until the supply of labour is adjusted to the amount of capital, and then the price of labour or wages will rise again. Hence we see that, in order to secure the prosperity of a country, it is necessary that its capital should increase with its population. No matter what may be the present condition of a people, if population increases faster than capital, or if capital remain stationary, or specially if it be diminishing, there must soon arrive a season of great distress among the labouring-classes. There will then be more labourers than can find sustaining employment.

Hence we see the great importance of both individual and national frugality. He who squanders away property in useless expenditure, is annihilating the very means by which the honest labourer might earn his subsistence. Thus also of nations. The government that wastes property in wars, or in any other form of unprofitable consumption, is diminishing the capital of the country, and scattering the resources which the toils of the people have accumulated. Every shilling thus spent is the destruction of so much of the means by which the labourers of the country are to be sustained. Suppose a nation be worth a hundred millions of capital, and that the use of all this capital be necessary in order to furnish employment and the means of subsistence to its population. If it spend ten millions in war, that part of its population which was sustained by the use of that ten millions must be unemployed. Or if this portion be not immediately *thrown out of employment*, and the injury be averaged, the price of wages for *the whole* will be reduced to the amount of this difference; every one will be worse off, and the lowest will be destitute, and will starve.

Of the Demand for Educated Labour.—This is substantially dependent upon the same principles. A community needs the services of lawyers, physicians, clergymen, judges, and men of science. Hence there will be a demand for these services. If there be a greater number of educated labourers than is required, the price of the wages of such labourers will fall. Under contrary circumstances it will rise. When the price of educated labour falls so low as not to remunerate the labourer for his skill and education, the supply will be reduced by the fact, that men will turn their attention to some other pursuit.

The demand for these different kinds of labour varies with the condition of society. The rich and luxurious have greater demand for medical aid than the poor and abstemious. The progress of society renders titles to land more intricate, and exposes men to greater danger from fraud. Hence the greater need of the services of those who have devoted themselves to the study of the laws, and who are therefore qualified to instruct us how we may avail ourselves of the benefit of law.

III. We next proceed to consider the *supply* of labour, both simple and educated.

The amount of labour in any country depends upon the number of healthy human beings inhabiting it. Hence the supply of labour will depend chiefly upon those conditions by which the increase or the continuance of human life is affected. Of these conditions the most important are the following:—

1. The means of living which may be commanded by the labourer. Where wages are low, and the means of living are with difficulty procured by the labouring-classes, the increase of population will be small, nay, population may become stationary, or it may even decrease. When a family, for instance, with its utmost labour, in health, can barely provide the means of subsistence, they must all suffer greatly in sickness. In such cases, parents or children very frequently die from the want of common conveniences or attentions. And as sickness is a calamity common to all men, under such circumstances large numbers of the poor must perish. For this reason epidemic diseases, especially those of children, are found to be much more fatal among the poor than among the rich. In countries

where the wages of the poor are very low, it is not uncommon to find parents who have had large families almost childless. On the contrary, just in proportion as the labouring-classes are enabled to provide themselves with all the conveniences of living, will the number of children who are reared be increased.*

And besides, labourers will readily emigrate from other less favoured countries to that in which the condition of the labouring-classes is happy and prosperous. In this manner population will always flow from old to new countries, and from regions where labour is poorly repaid to those in which it receives a more generous remuneration. Both of these circumstances tend at present to increase the population of the United States. There the wages of labour are high, and the means of living abundant. Those who are willing to labour can always command the necessaries, and frequently the conveniences of life, both for themselves and for their families. Hence a much smaller proportion of children die there than in older countries, and of course the population is much more rapidly augmented. And from the same cause—namely, the high price of labour—there is annually a prodigious amount of emigration thither from the older countries of Europe.

2. The next condition necessary to the rapid increase of population, is the moral condition of a people. Vice is always awfully expensive, and terribly desolating to human life. It matters not how great be the wages of the labourer; if those wages be spent in intemperance and profligacy, his family will suffer or starve. In some countries, such as the United States, almost all the suffering of children is the consequence of the vice of one or of both of their parents.

On these two circumstances, therefore—the wages of the labourer, and his own personal moral habits—does the increase of population principally depend. And as we have before stated, the supply of labourers is as the increase of population.

The same principles in the main govern the supply of educated labour. If the wages of such labour are sufficient to pay for the expenditure of time and capital necessary to the acquisition of the education, such labour will be produced—that is, men will turn their time and talents in this direction. On the contrary, when the remuneration of such labour is inadequate, men will not prepare themselves to perform it, and those already educated will devote themselves to some other occupation. The supply will thus be reduced so as to correspond with the demand.

Of Circumstances which Affect the Rate of Wages in Particular Instances.

We have seen that a given amount of capital is necessary in order to furnish employment for an individual labourer. Hence any given amount of capital directed to any one business, will only furnish employment for a corresponding number of labourers. And moreover, if any portion of the capital now employed in any one kind of business be withdrawn and devoted to any other kind of business, there will follow a change in the rate of wages in that employment. The wages in the business from which capital is withdrawn will fall; those in the business to which capital is directed will rise. Such is the result of all legislative enactments which affect the employment of capital.

But besides this more general cause, the price of labour in the several professions is affected by various special circumstances. For instance—

1. By the ease or difficulty, the pleasure or pain, &c. of the employment, and by the estimation in which it is held by the community.

When any trade is in its nature unpleasant, men do not like to practise it. Hence when we wish to employ them, we are obliged to overcome their reluctance by higher wages. When the performance of the labour is pleasant, many persons are willing to engage in it, and hence the supply being greater than the demand, the price of the labour falls accordingly.

2. By the skill required in performing the operation.

This results from two causes. First, the greater the skill required, the smaller will be the number able to perform the operation. Thus the supply will be small. And secondly, the longer will be the time spent in learning to perform it, and hence the greater wages will the labourer be entitled to receive.

3. The confidence reposed.

In many employments much reliance must be placed in the moral character, the courage, the discretion, the talent, and forethought of the agent. But inasmuch as these qualifications are not frequently found united in the same individual, the number of suitable candidates for such employments is small. Hence as the supply is commonly less than the demand, the wages in such employments are high. And inasmuch as those who have a large amount of capital at stake, find it for their interest to procure such labourers at any price, the wages of such persons will always be much higher than in cases when no such confidence is of necessity reposed.

4. Constancy or inconstancy of employment.

Some kinds of labour furnish incessant employment; others furnish employment only at intervals. Yet in the one case, as well as in the other, division of labour requires that the labourer devote his whole time to his business. Hence in the latter case it is reasonable that, for the performance of a particular operation, he should receive a larger remuneration than in the former. We pay more for riding a mile in a hackney-coach than for riding a mile in a stage-coach, because the employment in the one case is constant, and in the other inconstant. A large portion of the time of the driver of a hackney-coach is consumed in waiting in readiness for passengers. For this time we must pay our portion whenever we employ him.

OF THE PRICE OF MONEY.

Why we pay Interest for the use of Money.

The leading question which arrests our attention in the consideration of this subject is the following:—Why should the use of money have any price at all? As I return to a man the same value which I borrow of him, why should I pay him anything for having kept it during the interval? This question we shall in the first place attempt to answer.

Every man who labours at any regular employment possesses two qualities which render his services of value—these are *strength* and *skill*. The former enables him to execute simple labour, or labour of the cheapest kind; the latter, when united with the former, enables him to execute educated or higher-priced labour. But in order to perform the latter, he requires tools and materials—that is, capital. Without these he could perform only simple labour. Of what use would be the skill of the blacksmith without a forge and iron? or that of the carpenter without tools and wood? or that of the spinner without a spinning-jenny and raw cotton? Without these they would be all reduced to the necessity of that labour which could be performed with their naked hands.

Suppose now that I am a blacksmith, and own a forge, tools, and iron, with which I am daily employed, and thus earn the wages both of labour and skill: were I to lend them to another man for a week, and carry a hod during the meantime instead of working at my trade, and thus lose the profit of my *skill*, he who thus borrows my forge, tools, and iron should surely remunerate me for the use of them. Suppose he borrow them for a year, he should pay me for the same reason. And if I have the money with which he can purchase them for himself, and I lend it to him,

* It has latterly been surmised, with considerable probability, that the sinking of a population below a certain point in comfort, introduces conditions which tend to its increase; but the increase produced in these circumstances does not operate as a healthy increase would do, the people being then ill-cared for, ill-reared, ill-educated, and perhaps also dangerous, and therefore injurious to the development of the powers of capital.—Ed.

he should pay me just as truly for the money as for the tools and capital; because, if I had not lent it to him, I could have established another forge, which I could have made profitable to myself.

And here we may remark, in general, that when we speak of the loan of money, it is in reality not money, but other capital that is wanted, and for which we pay interest. Were a tradesman to keep the money which he borrows locked up in his drawer, it would be worth nothing to him. It can be only of use when it is exchanged for something else, which, being united with labour, will yield a profit. The fact is, that every one, as soon as he procures money, exchanges it for tools, or materials, or merchandise. Every one sees that these ought to pay interest, because they are the means of accumulation. Just as much should the money pay interest which is exchanged for them, and for which the owner of the money would have exchanged them, if he had not lent it to another.

Now it very frequently happens that the ability to labour is possessed by men who have no capital upon which to employ it. And on the other hand, capital is frequently possessed by individuals who have neither the skill nor the ability to labour. In such a case it is manifestly for the interest of both parties to form a copartnership, the one party furnishing the labour and skill, and the other furnishing the capital. By this means both parties are benefited. The labourer earns the wages of labour and skill instead of those of simple labour; the capitalist derives an income from his property without diminishing it, instead of being obliged to live upon the principal.

Now this takes place in two ways, both the same in principle, although the mode in which the arrangement is made is dissimilar.

The first is the case of wages. Here there is virtually a partnership formed between the capitalist and the labourer. The one furnishes the tools and the material, and takes all the risks of the operation, and divides with the labourer the profits, which he pays in the form of wages. These are generally agreed upon at the commencement between the parties, and are the same whether the operation be profitable or unprofitable. This, however, is not always the case. In the whale-fishery, the crew of a vessel receive a *pro rata* proportion of the profits in the place of regular wages, and of course their remuneration is greater or less according to the success of the voyage.

The second case is that in which the labourer assumes the risk, receives all the profit himself, and borrows his capital from the other, agreeing to pay him at a stated rate for the use of it. This is commonly the case in the borrowing and lending of money. If I purchase a shop and stock it with goods, and employ another person to keep it for me, paying him the customary wages, I act in the first-mentioned manner. If I lend him the money by which he purchases the shop and stock, and he trades on his own risk, paying me interest on the amount borrowed, I act in the second capacity.

It is the latter case that is to be considered in this place. Here the borrower uses the capital of the lender for his own advantage, and that advantage is equal to the difference between simple labour and labour united with skill. Did he not thus employ this capital, the lender would employ it himself. It is therefore just that the borrower of money should pay for the advantage which he gains, and of which he, by thus gaining it, deprives the owner.

Of Various Circumstances which affect the Rate of Interest.

We have thus far endeavoured to show that a price—that is, interest—should justly be paid for the use of capital. But we find that the interest of capital is different in different countries at the same time, and in the same country at different times, and in the same country and at the same time it is different in different kinds of investment. To the circumstances which give rise to these differences let us now attend:—

I. The rate of interest will be affected by the productiveness of capital.

When a capitalist, by the use of his own capital, can readily make 10 per cent. per annum, he will of course charge a higher interest upon it than when he can scarcely make 5 per cent. per annum. And it is evident, on the other hand, that the borrower will be willing to pay a higher interest in the former than in the latter case, because he will be able to make a higher profit by the use of it. Hence when land is both cheap and productive, interest will be high, because the investment of capital and labour in land and cultivation will be exceedingly profitable. The same reason operates in other cases.

Whether the productiveness of capital be great or small, supply will affect the rate of interest. When the supply is small, there will be a competition among the borrowers, and the lender will consequently receive the largest possible share of the profits; that is, interest will be high. When capital is abundant, there will be a competition among the lenders: interest will fall; that is, the lender will receive the smallest share of the profits.

Both of these causes tend to produce the high rate of interest so commonly observed in new countries. Land is cheap. It is in its highest state of fertility. All labour bears a very high price, for the results of labour are imperatively demanded; and at the same time capital is scarce, while the demand for it is incessant. As a country grows older, these circumstances change, and the interest of money gradually falls.

II. Secondly, another circumstance affecting the rate of interest is the *risk* of the investment.

When a man parts with his property, and places it in the power of another, there is at least a chance that he shall never see it again. This risk should justly be added to the price which is paid for the use of capital. Thus suppose that the fair compensation for the use of capital in one case were 5 per cent., on the supposition that it was perfectly sure; if, in another case, there were a risk equal to two in a hundred of its being totally lost, this 2 per cent. for the risk should be added to the 5 per cent. for use, and the interest of the latter loan would be justly 7 per cent. So in any other case of hazard.

This risk may depend upon several circumstances, as, for instance—

1. *The Nature of the Investment.*—The risk of loss would be less on money lent for the erection of a stone than of a wooden house, and less on that lent for the erection of a house than for carrying on the manufacture of gunpowder. When the whole security rests upon the capital purchased, it is manifest that the risk would therefore depend greatly on the nature of the material and the casualties to which it was subjected.

2. *The Character of the Borrower.*—Men differ greatly in intellectual and moral character. Some, with honest intentions, fail from want of skill; others, with sufficient skill, fail from want of honest intentions. Just in proportion to the deficiency in either of these respects is the hazard of lending increased. Every one must see that he would be better off to lend to a skilful and honest man at 5 per cent. than to a weak or treacherous man at 10 per cent.

3. The risk depends, again, upon *the character of the government.* When a government has gained the character of stability, and when justice is administered with promptitude and impartiality, so that every man knows that the whole power of society will be exerted for the purpose of enforcing his rights, the risk will be by all these circumstances diminished. When it is otherwise, and when a man knows that the justice of a cause gives no assurance of success, the hazard is increased, and interest will of course rise. This is one of the causes of the high rate of interest during the period of baronial oppression in Europe.

III. Thirdly, interest will vary according to the *convenience or inconvenience of the investment.*

When a man lends his money, he does not know how soon he may want it again, or how long he may wish to continue it in its present mode of investment. He, also, who lends money, always desires the interest to be paid punctually, because it is by means of this punctuality alone that he is able to make his arrangements for the payment of his own debts. Now all these circumstances are taken into account by him who has money to lend. He will lend at a lower rate when he can let his property remain lent as long as he pleases, or recall it when he will, and when the interest is paid punctually, than when he is unable to recall it except at a stated time, and may have it returned to him when it is not convenient, and when he cannot rely with certainty upon the punctual payment of the interest.

These several circumstances, as every one must see, enter justly into every transaction in which money is lent. The first is the difference which arises at different times from the *productiveness* of capital. This varies continually with the fluctuations in the success of business, and many other causes. Secondly, the rate of interest varies with the risk of the investment, this risk being liable to every degree of variation. And thirdly, it varies with the convenience or inconvenience of the investment; and all these may be united favourably in one instance, and unfavourably in another.

Hence arises the impolicy and injustice of establishing a legal rate of interest, to which all loans shall be subjected. It is rendering by law a mode of contract *uniform* which combines within itself more elements of *variation* than almost any other that can be named.

It may be useful, in closing this section, to add a few words respecting the nature of stocks, of which we now hear so much in conversation, and see so much in the daily papers:—

Suppose a bank is to be established, a railway or any other public work to be constructed. The sum which is to be invested is divided into portions or *shares* of a given amount; say, for instance, of a hundred pounds each. Whoever wishes to engage in the undertaking subscribes for as many of these shares as he pleases. When he pays the amount at which the share is valued, he receives a certificate of ownership, which entitles him to all the privileges of a stockholder, the principal one of which is, that he is entitled to his portion of whatever profit may arise from the operation. These shares are called *stocks*, and are transferable at any moment; the holder, whoever he may be, receiving the interest, or, as it is called, the *dividend*, at the regular times of payment.

The prices of these stocks rise and fall with the rate of interest which the undertaking pays. If any stock purchased at £100 a share pays the regular rate of interest, it will sell for £100, and then it is said to be *at par*. If it pay twice the regular rate of interest, and is perfectly safe, it will sell for £200 a share, and is then said to be 100 *per cent. above par*. If it pay but half the regular rate, it will sell for but £50 a share, and is said to be 50 per cent. *below par*. And so of any other instance.

Stocks, like any other investment, vary in price with the degree of risk to which they are subjected. If a stock pay a high dividend, but yet is liable to be entirely consumed by casualties, it will sell for less than another bearing lower interest, but of which the principal is secure. Thus insurance and steamboat stocks, though they pay large dividends, never bring a correspondent price, because of the losses to which they are unavoidably exposed. On the contrary, though an investment at present pays but little, yet is expected at some future time to be very valuable, it will bring a high price, on account of the anticipations which are formed concerning it. It is by such circumstances that the rise and fall of stocks are determined. They are constantly for sale in large cities, and their prices will rise and fall with the hopes and fears, the anticipations and apprehensions, of the buyers and sellers.

OF THE PRICE OF LAND OR RENT.

We have remarked in the preceding section, that stocks, or any other investments, will bring a price in the market in proportion to the annual interest which may be derived from them. A stock, let it have cost what it may, which produces £6 a year, if 6 per cent. be the regular rate of interest, pays the interest of £100, and it will sell for £100. If it yield £12, it will sell for £200, and so in any other proportion.

Now the same remark applies to the rent of land. If an acre of land, after paying the ordinary expenditure for tillage and carrying the produce to market, will yield £3 profit, it will sell for £50, supposing the regular rate of interest to be at 6 per cent. If the profit that may be derived from it be more, it will sell for more; if less, it will sell for less. And the same principle applies to land, whether it be used for tillage or for dwelling-houses.

Such is the general principle on which the rent of land depends. It is, however, to be remembered that the productiveness of land depends upon two circumstances—*fertility* and *situation*.

1. *Fertility.*—Every one knows that there exists great difference in the fertility of land. With the same cultivation, an acre in some situations will yield twice or three times as large a harvest as an acre in other situations. Some lands require annual manuring, others scarcely ever need to be manured at all. Now inasmuch as from an acre in the one place you can derive three times as much income as from an acre in the other, it is reasonable to suppose that the former would sell for three times as much as the latter.

2. *Situation.*—The products of land, however, are bulky, and it costs a very considerable portion of their exchangeable value to transport them to the market. The price of transportation is always to be deducted from the farmer's profit, and tends by so much to reduce the value of his land. It is on this account that railways, canals, and other means of internal improvement, confer so great a benefit upon a country. They remove the disadvantages of situation by reducing the cost of transportation.

Bearing these principles in mind, it will be easy to perceive in what manner rents will be adjusted in any given country. When a territory is at first settled, the land may be had for nothing: every one being at liberty to choose for himself the most productive lands—that is, the most fertile, and those most favourably situated, will be at first selected. These will bear no price, and will yield no rent, because they may be had for nothing.

When, however, these are all occupied, and others are needed, the land of the next inferior fertility will be put under tillage. As soon as this is done, the first class of lands will yield rent, and will command a price. Suppose lands of the first class to have produced fifty bushels to the acre, and lands of the second class but forty bushels: it will be as cheap for the settler to hire a farm of the first class, at a rent of ten bushels to the acre, as to have a farm of forty bushels to the acre for nothing. When the lands of the second class are all occupied, those of the third class will come into request; and as soon as these are tilled, those of the second class will also command a price, and will produce a rent. At the same time, the price and the rent of lands of the first class will be doubled. In this manner the rise of price and of rent in lands of various grades of fertility will go on increasing, until all the land worthy of cultivation is occupied.

As the common market for agricultural products is on the sea-coast, it might be supposed that the price of land would gradually diminish as you removed into the interior, until its disadvantages of situation reduced its value to nothing. This would be the case were it not for various counteracting circumstances. Among these are the following:—

1. The fertility of land in many instances increases as we retire from the coast. This fertility counterbalances the disadvantages of situation.

2. As a country advances in civilisation, its means of internal communication improve, and the inconvenience of situation is more and more removed.

3. As a country becomes settled, towns and cities grow up in the interior, and thus bring a market to the farmer. He is as much benefited by the bringing of the market to him, as he would be by the removal of his land to the market.

4. Sometimes a new invention in the arts transforms at once the conditions on which the progress of a country depend. Such was the result of the introduction of steam navigation on the waters of the Mississippi and its tributary streams. This invention opened this whole valley to the Atlantic, and gave to the towns on the banks of the river almost the advantages of a position on the sea-coast.

Besides these general circumstances, on which the commercial value of land depends, some others may be mentioned which are well worthy of notice. Man is endowed with a love for the beautiful, as well as with an intellectual and moral nature, and he very commonly takes these tastes into account in choosing for himself a place of abode. Hence land which is handsomely laid out and tastefully arranged, whether in a village or in the country, will sell for a higher price than that which possesses none of these recommendations. A farm or a dwelling-house, in a well-cultivated neighbourhood, where the people are virtuous and benevolent, will find more purchasers, and of course will sell for a higher price, than one of equal fertility where the inhabitants are ignorant and vicious, quarrelsome and malicious. Hence we see that were men to consult nothing but their own interests, they might very reasonably devote more care than they commonly do to embellishing their grounds, and supplying themselves and their families with the means of intellectual and moral improvement.

Land, however, is not always used for the purposes of agriculture. It is used in cities and towns, merely to afford space for the erection of storehouses and dwellings. In this case of course its fertility is of no consequence, and its only value depends upon its situation. Hence its price will be determined merely by this circumstance. Those portions which afford the greatest facilities for business will command the highest rent; and those which recede from them will command a lower and lower rent, until they have receded so far from the centre of business that the land is only valuable for dwelling-houses. The value of these, again, gradually diminishes until situation is but a small part of the price, and the land may profitably be devoted to gardening. Here the element of fertility again enters into the computation. The land immediately around a large city is thus commonly occupied by those who supply the market with recent vegetables and milk. At a small distance beyond it is devoted to the general purposes of agriculture, and becomes what may be properly denominated the country.

Having thus considered the general principles upon which the distribution of the profits of any undertaking is effected, we shall close this section by an example illustrative of the manner in which these principles operate in an individual instance:—

We will take, for the sake of this illustration, a loaf of bread. A farmer in the West Riding of Yorkshire devotes his land to the raising of wheat. He tills his land, raises his crop, and sells it to the miller. The price which he receives for his crop repays him for the cost of his own labour, the wages and support of his workmen, the cost of manures, the rent of his land, and interest on all the capital which has been invested. If he own the land, he receives the rent himself; if he hire it, he pays it to the landlord. The miller receives the grain, manufactures it into flour, transports it to Hull, and sells it to the flour-merchant. The sum for which he sells it repays him whatever he had paid the farmer, and remunerates him for the cost of making the flour. This must be sufficient to enable him to pay his various workmen, to remunerate him for his own labour and skill, the use of his capital, the wear and tear of his mill, and the cost of transportation to Hull. What he has paid the transportation agent must be sufficient to remunerate him for the use of his canal boats, the men and horses that have been employed in navigating them, the expense of tolls, and the interest on all the capital which is employed in the operation. The flour-merchant buys the flour, and keeps it in his storehouse to supply his customers. He is entitled to a sum sufficient to repay him for what he paid the miller, and also to interest on his investment, to remuneration for his labour and skill, and the cost of storeroom. The baker purchases the flour of the flour-merchant, and makes it into bread. He charges for his bread sufficient to repay him for what he paid the flour-merchant, and for all his labour and expense in turning the flour into bread. Thus when we purchase a loaf of bread, we pay our proportion of all these several expenses. And these several amounts, in all these instances, are distributed according to the rules which we have laid down. All the labour which has been employed is paid according to its value and skill; and all the capital according to the use and risk to which it had been subjected. The various items of cost, in the production of any article of utility, may be easily analysed in a similar manner.

IV. CONSUMPTION.

OF THE NATURE AND DESIGN OF CONSUMPTION.

We have thus far endeavoured to show in what manner the various objects for the gratification of desire are *produced*, in what manner they are *exchanged* among the producers, and in what manner the share to which each one of the producers is entitled, is *distributed* to each of them. But we know that all this is done with reference to another object. Everything that is of any value is designed to be used, and after it is thoroughly used, or, in familiar language, *used up*, it is worthless. All these previous operations only prepare the way for *consumption*, and it is consumption that creates the necessity for their being incessantly repeated.

Consumption is the reverse of production. Production is the act by which we *confer* value. Consumption is the act by which we *destroy* the value which has been thus conferred. When we speak of the destruction of value, we do not mean that the material itself is destroyed, but only that the form in which a particular value resided has been changed, and that hence that particular kind of value is annihilated. Thus if a load of wood be burned, its power of creating heat is destroyed for ever. If bread be eaten, or thrown into the sea, or burned by accident, or rendered useless by mould, in either case its utility is destroyed, and we say the bread is consumed. And thus we see that it makes no difference as to the *fact* of consumption, whether any benefit be *derived* from it or not. In the one case, as well as in the other, the utility is destroyed.

It seems to be a law of nature that we cannot create one value without destroying another. He who chops down a tree and saws it into boards, destroys for ever the value of the tree as a tree. It can never more give shade to the traveller nor gratify the taste of the tourist. He who butchers an ox for beef, destroys for ever the utility of the animal as a beast of draught. If we eat an apple, we annihilate for ever the quality in the apple of giving pleasure to any other being. And thus, in general, consumption is a sort of exchange, in which we surrender one value for the sake either of creating another value, or else for the sake of gratifying some desire which we consider of more importance than the existence of the value which we annihilate.

1. Consumption is either of *labour* or of *capital*. If I purchase five dollars' worth of mahogany, and pay a mechanic ten dollars for his *labour* in making it into a table, I have consumed five dollars' worth of capital and ten dollars' worth of labour. If I have made it myself, instead of employing another, I have consumed the same amount of value in my own labour. And in-

asmuch as it costs just as much to support a human being whether he labour or whether he remain idle, the spending a day in idleness should always be considered as the consumption of a day's labour. In estimating the benefit of holidays, we should always remember that the time which they occupy is the consumption of so much labour. And the profitableness of the consumption is to be estimated by the benefit of the result which is attained.

2. Consumption is either *partial* or *total*. Sometimes after one value has been consumed, another and an important value remains. A pair of India-rubber shoes may be worn out, and be useless as shoes, and yet they may be valuable for the manufacture of India-rubber cloth. A linen garment may be worn out, and its utility as a garment may have been annihilated, and yet it may possess an important value to the papermaker. On the other hand, when we eat a piece of bread, as it has but one value, and that value is destroyed, the consumption is total. When we burn gunpowder in fireworks, and, commonly, when we use property to gratify our appetites, the case is the same. Hence we see the importance of consuming every value of every kind which a substance possesses; and also of consuming nothing for the purposes of gratification, unless for a reasonable and adequate cause.

3. Consumption is either *voluntary* or *involuntary*. It is voluntary when we destroy value by design for the purpose of accomplishing some ulterior result. It is involuntary when it takes place by accident. A pile of wood may be burned in a fireplace for the purpose of warming a parlour; or, on the other hand, it may be set on fire by accident, and totally consumed. In the one case, as in the other, the value is destroyed, the only difference is in the result.

Besides, however, the consumption by accident, a continual consumption is going on by the ordinary agents of nature. If a pile of wood is suffered to remain for a long time exposed to the changes of the weather, it will be rendered utterly worthless. Its value is thus as entirely destroyed as it would have been by fire. If a loaf of bread become mouldy through neglect, its value is as thoroughly consumed as if it had fallen into the fire the moment after it had been baked. Vegetable matter decays — animal matter putrefies — the metals are corroded; and thus consumption is continually going on, by which the values which we create will be destroyed unless we watch over them with perpetual vigilance. Childish, imbecile carelessness is enough to render any man poor without the aid of a single positive vice.

4. Consumption is either *rapid* or *gradual*. The consumption of wood for fuel is rapid. The consumption of the axe with which we chop it, or of the fireplace in which we burn it, is gradual. But the one is going on as certainly as the other; and hence in estimating his expenses, if a man wish to estimate them correctly, the one must be taken into the account as well as the other. If a man build a house and occupy it for ten years, the gradual consumption has materially diminished its value. If now, at the close of this period, he estimate the value of the house at its original cost, he will greatly overrate his property. The same is true of furniture, and of everything else which we use.

It need scarcely be remarked, that the annual consumption of an individual is the total amount of values which he consumes, whether in his business or in his family. Unless his annual production be sufficient to replace the whole of his annual consumption, he will run in debt. By as much as his annual production exceeds his annual consumption, he will be growing richer. Hence the object of every thrifty man is to render this excess as great as possible.

II. Of the Design of Consumption.

The design of consumption is easily seen. Inasmuch as consumption is the destruction of some value, it is of the nature of an infelicity. We never therefore consume, but with the expectation of procuring some greater good than that which we annihilate. This good may be of two kinds: First, we consume one value for the sake of procuring another and better value; or, secondly, we consume a value for the sake of gratifying some appetite or desire—that is, for the sake of increasing our own personal happiness.

1. *Consumption for the Sake of the Increase of Value.*—In this manner the farmer consumes seed, manures, labour, and tools, that he may thus be enabled to produce a harvest. The manufacturer consumes raw cotton, labour, machinery, &c. in order to produce cloth. The mantua-maker consumes calico, thread, needles, and labour, in order to produce a new dress. And thus, in all the various occupations of men, materials of every kind and labour are consumed for the sake of creating some article of use, or convenience, or luxury.

2. *Consumption for the Sake of the Gratification of Desire.*—Some of our desires have respect to our life, and health, and comfort. Such are the desire for food, clothing, shelter, and the various conveniences by which the heat of summer and the cold of winter may be modified. Others are merely for the gratification of the senses, without any regard to the benefit which we derive beyond that of simple sensual pleasure. Such are the desires for the luxuries of the table, of dress, equipage, and for those modes of living which are demanded by fashion. Some of our desires are gratified by intellectual pleasures, and others by the pleasure of doing good. It is not necessary that I should enumerate all the various modes of expenditure. In general they consume the value which they appropriate, and all that remains is the gratification which they produce.

OF THE DIFFERENT KINDS OF CONSUMPTION.

Consumption is of two kinds—*individual* and *national*. Individual consumption is of two kinds—first, for the sake of *reproduction;* and secondly, for *gratification*.

Of Individual Consumption for the Sake of Reproduction.

The design of the consumer in this case is the reproduction of capital, in some form different from that in which the capital is consumed. He would gladly produce without consumption were it possible. But to do so is contrary to the law of his being. Consumption is necessary; but if a man be wise, he will consume as *little* as possible. Production is his remuneration, and if he be wise, he will render this as *great* as possible. His whole gain is the amount by which his production exceeds his consumption. The greater this excess, the greater will be his profit. The rule by which he should therefore be governed, is *to create as large a product as possible by the consumption of as small a value as possible.*

The consumption of a producer is of two kinds—of capital and of labour.

Of Consumption of Capital.—The principles which should govern us here are, I suppose, the following:—

1. The consumption of capital should be as *small* in amount as is consistent with the creation of the desired product. A shoemaker who habitually cuts up a side of leather so carelessly that leather sufficient for one pair of shoes is wasted, will never grow rich. The farmer who sows two bushels of seed when one would have answered as well, loses the half of his seed. In China, sowing is always done by drilling instead of broadcast. It has been computed that by this method as much grain is saved as would feed the whole population of Great Britain. The useless expenditure of fuel in Britain is enormous. It is supposed that not more than one-tenth of the heat of the fuel employed is rendered available in a common fireplace.

2. Capital of no *greater value than is necessary* should be employed to create the desired product. Thus it is for the interest of every producer to ascertain in what manner he may be able to accomplish his purpose, by the consumption of the least valuable materials. The merchant inquires before he imports a product from a foreign country, with what export he can procure it at the cheapest rate. So the manufacturer, if he be wise, will keep himself informed of the progress of science

and of the arts, that he may learn in what manner a cheaper article may be substituted for a dearer in the creation of his product. A fortune has frequently been realised by the discovery of a cheaper dye-stuff, or the substitution of a single cheaper material in the place of that ordinarily in use.

5. *Every utility* possessed by the material consumed should be rendered *in the best manner available*. Thus in an oil-mill the flax-seed from which linseed oil has been expressed is a valuable food for cattle. After the brewer has extracted the saccharine matter from barley, the grains, as they are called, are valuable for the same purpose. The tan bark, after the tanning matter has been extracted, is valuable for fuel. This economy of materials is very well illustrated in the manufacture of combs. In a well-conducted establishment of this kind, every part of the horn, the core, the body, the tip, the shavings, the fat, and the mucilage, are all turned to some available purpose.

Nor is this all. The values which are consumed should be *consumed to the very last*. Thus in the working of a steam-engine it is necessary to evolve a great amount of caloric, and this is the most expensive part of the process. Now economy demands that this caloric should be produced at the least possible expense, and that having been produced, it should be used for every purpose that it can be made to serve. But every one must have perceived, by the flame which escapes from the chimney of a furnace, that a very large portion of the caloric evolved is absolutely wasted. A very great economical improvement has of late been made in some of the iron-works in Great Britain. This caloric, which was formerly wasted, is used to heat the air which is blown into the furnace. By this expedient a very great saving of fuel is accomplished.

Consumption of Labour.—As labour is expensive in the same manner as capital, economy teaches us to consume precisely as much of it as is necessary to accomplish our purpose in the best possible manner.

1. We should employ no *more* labour than is necessary. Too many labourers will always encourage each other in idleness. When there is one man at leisure to tell stories, the time of several others must be consumed in listening to them.

2. We should employ no *less* labour than is necessary. When, from want of a sufficient number of labourers, one labourer is obliged to perform several kinds of work, we lose the advantage of division of labour, and also expose ourselves to all the inconveniences of confusion and disorder.

3. We should employ labour of no *higher price* than is necessary. In any extensive operation, it will be seen upon reflection that some parts of the process require more skill and attention than others. Some will require labour worth five or ten shillings a day, and others labour worth not more than eightpence or one shilling a day. It is of great importance in any large establishment so to arrange the labourers that no workman shall be employed at a higher price than the labour which he performs is actually worth. It is, however, to be remarked that an error may exist of the opposite kind. It is as bad economy to employ too cheap as too dear labour. In the one case we lose by paying too high a price for labour, in the other by that destruction of materials which always results from the want of skill in a labourer.

4. The labour which we have paid for should *all be performed*. Time is money, to him at least who pays money for it. If it be wasted, his money is thrown away; and by throwing away money no one ever became rich.

In order to secure this result, several things must, however, be attended to. The most important of these is, that he who employs labourers should in person superintend his own affairs. No one will take as much interest in our own concerns as ourselves. When this cannot be done, the establishment should be so arranged as to insure full and vigilant superintendence over every part, and under such responsibilities as will bring a knowledge of any delinquency to the notice of the competent authority. Besides this, much time is saved by system and regularity. When one is obliged to wait for another, much labour is of necessity wasted. Tools should always be in the best possible condition. This saves time, and takes away one of the most common excuses for negligence.

Consumption for Gratification.

Consumption may be conducted upon economical principles or the reverse. It is clearly the interest of every individual that he should not consume his capital by expenditure upon objects which are to yield him no pleasure or profit of any kind; that everything he purchases should be consumed as thoroughly as possible, and not in any respect wasted. In this way no labour is lost. It is the same with national consumption or expenditure. When the public money is spent upon war, upon idle functionaries or sinecurists, or upon any kind of public work which is not to be either directly or indirectly useful, the labour which produced that money is lost, or has gone in vain. It is nothing in such cases to say that money has been circulated, that employment has been given, and so forth. Men do not absolutely need to be kept working in any particular way, and every idle consumer of others' goods than his own is a source of loss to the community. The labour could have been applied otherwise, and to a useful instead of a useless end. 'There is one duty,' says a recent writer, 'very often ostentatiously professed by the richer to the working and trading classes, from which political economists would readily grant them an exemption—*the spending of money for the good of trade*. People have been known to claim credit for this amiable motive not only when pomp and luxury are in reality the exciting causes of their purchases, but even when they fail to pay the price of what they have obtained. The epistolary and miscellaneous literature of the eighteenth century shows that it was sometimes a fixed creed, especially in France, that if the rich did not spend their money on a certain humane and rational scale, the world of tradesmen and labourers must necessarily starve. There is, however, a material difference between what is *spent* in the ordinary acceptation of the term, and what is devoted to productive purposes. In the latter case, whoever receives the money in his hands, be he speculator or workman, must restore something at least equal to it in value, if not more valuable. But spending does not involve this phenomenon in all its grades. Much of the money dispersed around him by an extravagant man is consumed in this or that stage; it very seldom leaves behind it value nearly equal to its amount. . . . . If it be right to preach that men should spend money for the good of trade, economy ought to be dumb; it is a paltry household quality that must sink before the philanthropic spirit of animating trade and labour by expenditure. We do not find, however, that any one dares thus to set the two virtues in antagonism against each other. When people speak of encouraging trade, they do so generally, and without reference to any antagonistic principle; and if it were asked whether it were more consistent with duty, both public and private, to spend a sum which would be missed in the household for the benefit of trade, or to retain it for home purposes, it would be difficult to find any one prepared seriously to support the former line of expenditure. In fact, when expenditure for the benefit of trade comes to be considered along with other serious uses of the pecuniary means of a family, they never are deliberately weighed against each other, and the philanthropic motive remains forgotten until the head of the house grows rich.'

*** We have to acknowledge ourselves indebted for the above sketch of the science of Political Economy to an American writer. It is abridged, with a few alterations, from a small work entitled 'The Elements of Political Economy, by Francis Wayland, D.D., President of Brown University.' Boston, United States, 1837.

COMMERCE—MONEY—BANKS.

COMMERCE.

Man has been defined by some naturalists as an *exchanging animal*—an animal who buys and sells—that being an act performed by no other living creature, and therefore suitable as a distinction in character, though others, much more exalted, might readily be found. The practice of exchanging one commodity for another is doubtless coeval with the first herding of mankind together. No man, even in the rudest savage state, and who lives in the society of neighbours, can rest satisfied with such objects as he can procure or fashion by his own labour. He must depend on others for assistance, while he assists them in return. The cultivator of the ground would exchange some of its produce for an animal from the flocks of his neighbour; and both would be glad to give a portion of their wealth for the clothing or weapons made by a third party. Thus *exchanging* becomes a matter of convenience between two parties, each of whom is anxious to obtain a share of the other's goods for a share of his own, and a mutual advantage is the result. Such desires and practices must have been displayed in the very earliest stages of society. No nation of African or Indian savages is ever found without a strong inclination to exchange the rude products of their country for the articles possessed by the traveller; an ox or sheep being perhaps eagerly offered by them for a single needle, a nail, or a small toy looking-glass.

As mankind advance in their social condition, the practice of exchanging increases; the desires and necessities become more urgent; each person finds it more profitable and agreeable to adopt and hold by one fixed employment, and to sell the produce of his labour for a variety of articles made by others, than to attempt to make everything for himself; and finally, for the sake of convenience, a class of persons are engaged to conduct the exchanges from one hand to another. In this improved condition, the production of articles of general consumption is called *manufacturing;* while that department of industry in which the exchanging is transacted is called *trade* or *commerce*. For still further convenience, the business of exchanging is committed to several orders of traders—the wholesale merchants, who in the first instance purchase large quantities of goods from the producers; the retail dealers, who have been supplied in smaller quantities from the merchants, and sell individual articles or minute portions to the public; and to these sometimes an intermediate dealer is added. In this manner the transfer from the workshop of the manufacturer to the house of the actual consumer is interrupted by several distinct processes of exchange, in which each seller obtains a certain profit at the expense of the person who has ultimately to buy and use the article. It is a principle of trade, that the fewer hands through which any article is made to pass the better for the consumer, because the article can be brought with the least burthen of profits, or at the lowest price, into general use. But this principle, sound as it is in the abstract, is counteracted by another, which must on no account be lost sight of. This is the principle of *convenience*. A manufacturer engaged deeply in his own pursuits finds it more profitable and agreeable to sell his articles in large than small quantities. The maker of millions of yards of cloth has no time to spend in selling single yards. If he were compelled to sell by retail, he would have no time to conduct his affairs; he could manufacture only a small quantity, and therefore being limited in his amount of produce and sales, he must take larger profits. Thus, upon the whole, it is much better [illegible] concerned to allow the manufacturer to pursu[illegible] own way in selling only very large quantities to wholesale merchants. To these traders the same rule may be applied. They seek out the seats of manufacture, and purchasing a large variety of goods, they send them to the towns and places where they are required by the public, and there the articles can be had individually from a shop. It is evident that if any man wish to buy a handkerchief, he may procure it much more cheaply from any shop in which such things are sold at an advance upon the original cost, than if he were to travel perhaps hundreds of miles to the house of the manufacturer, and there make the purchase. The use of an intermediate class to conduct exchanges is thus very conspicuous; and any attempt to revert generally to the original practice of causing the maker to deal with the consumer, would be entirely incompatible with an enlarged system of trade between different countries, or even between different places in the same country. We say generally, because there are instances in which makers may, with advantage to themselves and the community, sell their produce in small quantities or single articles to the public; but these are exceptions to a common rule.

Convenience—which is for the most part but another name for time, or labour, or capital—forms, it is evident, a guiding principle of trade, and requires the same consideration as the actual value of an article. This, however, has been recognised only in very recent times. At one period there were laws to prevent farmers from selling their grain in a large quantity or by the lump, without exposing it in an open market. Such laws were manifestly unjust. They interfered with the liberty of the farmer, who, in his capacity of manufacturer, had surely a right to sell his produce in whichever way he felt it to be most for his advantage. It would be the same kind of injustice if the law, for example, were to prevent a manufacturer of handkerchiefs from selling them at his own workshop to wholesale dealers, and causing him to take them many miles to a certain street in a certain town, and there expose them for sale in small lots to the public. It is of the greatest importance in matters of trade and commerce *never to interfere in any shape to prevent men from dealing in whatever manner appears most beneficial and convenient to themselves, provided it be conformable with strict justice.* Sellers, of whatever grade, being left to consult their own interest and inclinations, the public in the end, though probably in a way not easily recognisable by an unreflecting mind, reaps the advantage.

Commerce, by which we comprehend traffic carried on at home or with foreign countries, is of great antiquity, and both in the earliest times and in our own day has been one of the principal engines of civilisation. Among the industrious nations which at a remote period of history were planted on the borders of the Mediterranean Sea, it became a means of spreading knowledge in the interior of Asia, and many parts of Africa and Europe. Unfortunately, the intelligence which was so disseminated was afterwards obliterated by the overruling powers of barbarous and warlike nations; but the efficacy of commerce in modern times is likely to be permanent wherever its influence is extended, seeing that the greatest manufacturing and mercantile people are at the same time the most powerful and most capable of offering protection to those who sustain a commercial intercourse with them. It is exceedingly pleasing thus to reflect on what commerce is capable of effecting, independent of the actual comfort which it produces wherever it is fairly introduced. By its appeals to the selfishness, the vanity, and other passions, good and bad, of mankind, it appears to be the

best of all forerunners to the efforts of the schoolmaster and the missionary. Its influence in this respect has been remarkably exemplified in the boundless regions of Hindoostan, which, by the efforts of a company of merchants, have been laid open to the settlement of enlightened men from Europe, who, though by slow degrees, will ultimately spread the blessings of education and the decencies of social life among many millions of human beings. In the remote islands in the Pacific Ocean, the influence of commerce has been recently of marked utility. The introduction of articles of a fanciful nature, both for the ornamenting and covering of the person, has induced a desire of following European manners and customs; and as these commodities cannot be procured but by the exchange of native commodities, a spirit of industry has consequently been produced which cannot fail to be of both moral and physical advantage to the natives. It is always thus with the intercourse which commerce necessarily involves. New tastes are created, and to be gratified industry must be exerted. But to witness the extraordinary influence of commerce in producing civilised and refined habits, we need not look beyond our own country. Commerce, in this its chosen seat, has caused roads everywhere to be cut, canals to be opened, railways to be formed, expeditious modes of travelling and communicating by sea and land to be effected; all of which great accessories to our comfort have tended in the most wonderful manner to introduce not only useful commodities and personal luxuries, but highly cultivated sentiments, literature, and the arts, into districts which at no distant period lay in a comparatively primitive condition. The intercourse which commerce in this manner requires is the grand lever which, it is apparent, must in the first place be employed to lift the load of ignorance from off the natives of Africa and other barbarous regions; and when this lever is properly insinuated, the way will soon be prepared for the introduction of those measures of melioration which philanthropists so anxiously design.

It is obvious that this scheme of mutual interchange among nations of the commodities which they respectively produce is agreeable to every rational principle, and must have been designed by a wise Providence for the universal benefit of His creatures. In order that manufactures may be produced, and commerce brought in to disseminate them both at home and abroad where they are wanted, no species of legislative enactment is requisite either to encourage or direct. The law which governs production and consumption is a law of nature—it is the overruling principle of *self-interest*, by which only that quantity of manufactures is produced which can be advantageously disposed of, and only those commodities purchased and consumed which the wants of individuals require. And curiously enough, this principle of self-interest, if allowed free scope, is uniformly and sufficiently competent to regulate both the production and consumption of commodities, to a degree more nice and satisfactory than could be attained by the best devised statutes which the wisest legislators could enact. The grand principle, therefore, which can alone regulate commerce and manufactures is found in the natural passion for gain; and the sole essential requisite for the successful advancement of mercantile and manufacturing industry and wealth among any people, is for that people to be unfettered by enactments; each one buying and selling when, where, and at what price he pleases.

Evident as these principles must be to all who have any knowledge of social life, they have, either from ignorance or some other cause, been generally lost sight of by governments in all ages of the world, and plans have been contrived to regulate that which, if left alone, would have much better regulated itself. To such an extent have regulating and restrictive laws been carried in some countries, that they have nearly annihilated both manufactures and legitimate commerce, and reduced masses of the people to the condition of paupers, besides encouraging the pernicious and demoralising pursuits of the smuggler. The restrictions and regulations which governments usually impose upon commerce do not perhaps originate so much in the plea that manufacturers and merchants stand in the condition of children, and require to be taken care of lest they should hurt themselves, as from the unfortunate exigencies under which the governments happen to be placed. They have all less or more engaged in wars, which have been conducted at an enormous expense to their respective countries. In order to liquidate these expenses, all kinds of taxes are levied, directly and indirectly; but as the levying of these taxes breeds discontent, large bodies of military have usually to be kept up, to act as an armed national police. Thus the people of these countries have for ages to go on paying not only the price of the wars, or the interest of the sums borrowed and laid out upon the wars, but as much more for the military force afterwards imposed upon them. What is more distressing, the people have probably to give a deal of money, in order that their respective governments may be the more able to secure the attachment of men of consequence to assist in allaying the general clamours for a redress of grievances. This is a very rough view of the matter, but it is enough to show the dreadful exigencies into which nations fall by their engaging in wars or other expensive follies. In whatever manner, however, national exigencies originate, the plan pursued for relief consists chiefly in the imposition of duties on certain commodities much in demand, and at various stages of their manufacture, transmission, and sale. It is likewise customary to impose duties on goods imported from foreign countries, with the view of protecting the manufacturers of such articles in this country; but this only benefits a class, or a few persons, at the expense of the whole community, and therefore all such duties are in the main as detrimental to trade and the public welfare as those imposed for the liquidation of national debt and expenditure. For further observations in relation to this subject, we refer to the article POLITICAL ECONOMY. 'There is,' observes Mr M'Culloch in his 'Dictionary of Commerce,' 'no jugglery in commerce. Whether it be carried on between individuals of the same country, or of different countries, it is in all cases bottomed on a fair principle of reciprocity. Those who will not buy need not expect to sell, and conversely. It is impossible to export without making a corresponding importation. We get nothing from the foreigner gratuitously; and hence, when we prevent the importation of produce from abroad, we prevent by the very same act the exportation of an equal amount of British produce. All that the exclusion of foreign commodities ever effects, is the substitution of one sort of demand for another. It has been said, that "when we drink beer and porter we consume the produce of English industry, whereas, when we drink port or claret we consume the produce of the industry of the Portuguese and French, to the obvious advantage of the latter, and the prejudice of our countrymen!" But how paradoxical soever the assertion may at first sight appear, there is not at bottom any real distinction between the two cases. What is it that induces foreigners to supply us with port and claret? The answer is obvious:—We either send directly to Portugal and France *an equivalent in British produce*, or we send such equivalent, in the first place, to South America for bullion, and then send that bullion to the continent to pay for the wine. And hence it is as clear as the sun at noonday, that the Englishman who drinks only French wine, who eats only bread made of Polish wheat, and who wears only Saxon cloth, gives, by occasioning the exportation of a corresponding amount of British cotton, hardware, leather, or other produce, the same encouragement to the industry of his countrymen that he would were he to consume nothing not immediately produced at home. A quantity of port wine and a quantity of Birmingham goods are respectively of the same value; so that whether we directly consume the hardware, or having exchanged it for the wine, consume the latter, in so far as the

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From these explanations, it will be observed that it is immaterial what is given in exchange for imported goods—whether money or native produce. At the same time it must be understood that if money is given, there must exist some active industry in the country by which the money is realised. As a general question in commerce, it is of no consequence what is the nature of the industry by which the money is produced. It may consist in the raising of superabundant crops, or other raw produce for exportation, or of manufacturing raw and comparatively valueless materials into articles of value and demand, or of carrying goods from one country to another. Unless a country possess one or more of these branches of industry, it is without the means of paying for imported articles, and must retire from the field of general commerce. England is not of sufficiently large dimensions to export superabundant crops of grain, but it possesses in an extraordinary degree the means of manufacturing mineral and other substances into articles for exchange, and it derives no inconsiderable profit from the carrying of commodities. Its manufactured goods, therefore, pay for imports of foreign articles, including bullion or the raw material of money, and these again, in a manufactured state, are a fund for the payment of still further imports. Thus the wealth of our country has increased.

PRINCIPLES OF COMMERCE.

The practice of commerce is in a great measure dependent on mutual good faith, and the integrity of seller and buyer, and can in no case permanently flourish where these fundamental qualities are wanting. The first or great leading quality, therefore, in the character of a merchant ought to be scrupulous honesty both in word and deed. The article which he proposes to dispose of must be exactly what he declares it to be, not inferior or in any respect unsound in its nature. If it possess any blemishes, these must be announced to the buyer before the bargain is concluded, and if necessary, though at a considerable loss, an allowance made for them. The merchant is not less called on to be faithful in the fulfilment of all promises which he may make, whether with respect to goods or their payment; because those to whom the promises have been made may on that account have made similar promises to others, and therefore the breaking of a single promise may prove injurious in every link of a whole train of transactions. Perfect honesty or integrity is a fundamental principle of trade; and the next most important are strict regularity in all proceedings, according to established usage, and also steady perseverance. The merchant must give regular attendance during the hours of business; be regular in executing all orders and answering all letters; regular in the keeping of his books, and in the reckoning of his stock and monies; in short, he must be methodic and careful in all branches of his concerns, for without this species of attention the best business is apt to become confused, and to be ultimately ruined. What is true of individuals holds true also when applied to a whole nation. No people have ever attained opulence and high mercantile consideration who have not possessed a character for integrity and regularity in all their dealings.

Besides these indispensable qualities in the individual character of a merchant or tradesman, there is required a happy combination of enterprise and prudence with the utmost coolness—enterprise to embrace favourable opportunities of buying and selling, and prudence and coolness to restrain from engaging in over-hazardous and ruinous speculations. In all his transactions, the man of business is understood to proceed upon a cool, inflexible principle of doing that which is most advantageous for himself, without fear or favour; because in commerce each party is supposed to be governed by motives of self-interest (always within the rules of honesty and propriety), and is under no obligation to deal from mere personal regard, or any kind of friendly consideration. In commerce there is, strictly speaking, no friendship in the ordinary acceptation of the term. If there be friendship among the parties concerned, it is a thing aloof from business transactions—a matter of private arrangement—and is only to be regarded as such. On this account, even among [illegible] intimate friends, there must be an exact mode of dealing, and the most accurate counting and reckoning.

The British, for several centuries, seem to have been endowed above all other nations with those qualities of mind which are suitable for the conducting of commerce on an enlarged and liberal scale. Their integrity, persevering industry, enterprise, prudence, and liberality of sentiment, have never been excelled. In patient industry they have been rivalled by the Dutch; but in point of enterprise and liberality that people have fallen far short of them, and their trade has languished accordingly. The British are pre-eminently a commercial as well as a manufacturing people. Taking them generally, they possess a spirit of restless industry, which renders them actually unhappy unless when busily engaged in some pursuit calculated to enrich them, or at least to produce for their families the means of a respectable subsistence. The Americans, who are but a branch of the same British stock, are equally if not more remarkable for this fervent spirit of industry; and though only set up as a separate nation within a comparatively recent period, and less distinguished for their integrity and prudence than the English, have already distanced many of those dignified European principalities and powers which first discovered and colonised their country. The French, the Germans, the Spaniards, the Portuguese, the Italians, and others, though each possessing a larger or smaller extent of manufactures and commerce, are obviously deficient in a national sense of the eager spirit of industry which is so characteristic of the people of Great Britain. Taken in the gross, they are too apt to addict themselves to amusement in preference to business. They delight in holidays, and will at any time leave their work to mingle in a dance or some kind of buffoonery in which an Englishman would be ashamed to appear. Scarcely one of the continental nations, moreover, has yet settled down under a well-conducted government appointed by the people. There indeed seems to be little which is settled amongst them. Some of the principal are yet at that stage of social life which was common in England about the reign of Henry VII.; others are not farther advanced than a period considerably earlier; and all have yet much to suffer and to learn before they attain that state of quietude and security to life and property, that condition of domestic comfort and national prosperity, which Great Britain, with all its imperfections, so amply enjoys.

COMMERCIAL TERMS AND TRANSACTIONS.

The following explanations of the principal terms used in commerce will illustrate the mode of conducting business transactions:—

Firm.—Every business, whether private or public, is conducted under a specified designation or title, called the name of the firm. This name may be that of a single individual to whom the business belongs, or of two or more individuals, or any title which it may be found advisable to adopt. Sometimes the name of a firm remains long after all who are indicated by it are dead. In such a case the business has passed into the hands of new proprietors, who, though legally responsible for its obligations, are not for some private reason inclined to change the old and well-known title of their firm. A particular firm or business-concern is sometimes personified in the term *house*—as, Such a house does a great deal of business, &c.

Company.—Two or more individuals engaged in one business constitute a company or copartnery, each individual being called a partner. Companies are of two kinds—private and public. A private company is organised by a private arrangement among the parties, each having certain duties to perform, and a certain share

in the concern. In companies of the private and common description no individual can leave the concern at his own pleasure, for by doing so he might seriously injure or embarrass his partners. He can withdraw only after giving a reasonable warning, by which time is allowed to wind up the concern, or place it in a condition to pay him back the capital which he has risked, or the profits which are his due. No partner, however, can transfer his share to another person, by which a new member would be introduced into the firm without the consent of the partners.

The profits of partnerships are divided according to a specified agreement or deed of copartnery. Generally in the case of partnerships of two or three persons, each receives the same share on the occasion of an annual division, but in other cases a partner may not be entitled to more than a fourth or sixth part of what another receives. The amount of capital which a partner invests in the concern, the service he can be to the business, and other circumstances, regulate the amount of his share. When each of two persons sinks the same capital, but one takes the whole of the trouble, then he on whom the trouble falls, who is called the active partner, is entitled to receive a stated sum in the form of salary over and above his share of profits. Whatever be the share which individual partners have in a concern, the whole are equally liable for the debts incurred by the company, because the public give credit only on the faith that the company generally is responsible. He who draws the smallest fraction of profit, failing the others, may be compelled to pay the whole debts. On this account every partner, on leaving a company, should be careful to advertise in the Gazette and newspapers that he no longer belongs to the firm of which he was a member; he is then responsible for no debts incurred subsequent to the announcement.

Public companies are very different: they consist of a large body of partners, or proprietors of shares, the aggregate amount of which forms a joint stock, and hence such associations are called *joint-stock companies*. They are public, from being constituted of all persons who choose to purchase shares, and these shares or rights of partnership are also publicly saleable at any time without the consent of the company. The value of a share in a joint-stock company is always the price which it will bring in the market; and this may be either greater or less, in any proportion, than the sum which its owner stands credited for in the stock of the company. Unless specially provided for in the fundamental deed of copartnery, every member of a joint-stock company is liable in his whole personal property or fortune for the debts of the concern. In some instances this liability is obviated by the provisions of an act of parliament, or parliamentary charter, establishing the company. Joint-stock companies are managed by directors appointed by the shareholders.

It is an axiom in commerce, that business is much better conducted by single individuals for their own behoof, than by companies of any kind; as respects joint-stock associations, they are only useful in very great concerns requiring enormous capital and involving serious risks of loss.

Capital.—What is now termed capital was in former times called *stock*. The capital of a merchant is strictly the amount of money which he embarks in his trade, or trades upon—that is, employs for buying goods, paying wages of servants, and liquidating all debts when due. When trading within the limits of his capital, business is done upon a secure footing; but if he proceed beyond these in any material degree, he is said to be *over-trading*, and is exposed to the chance of ruin or very serious embarrassment. Trading beyond the amount of available capital is, nevertheless, a prevailing error, and causes innumerable bankruptcies. With a comparatively small capital, a tradesman may carry on a large business by receiving payments shortly after making his outlays. By this means there is a rapid turning over of money, and small profits upon the various transactions speedily mount up to a large revenue. For example, if a tradesman turn over his capital twelve times in the year, at each time receiving money for what he sells, he can afford to do business on a twelve times less profit than if he could turn over the same capital only once during the year. This leads us to a consideration of credit.

Credit in business is of the nature of a loan, and is founded on a confidence in the integrity of the person credited, or the borrower. An individual wishes to buy an article from a tradesman, but he has not money to pay for it, and requires to have it on credit, giving either a special or implied promise to pay its value at a future time. This is getting credit; and it is clear that the seller is a lender to the buyer. In all such cases the seller must be remunerated for making his loan. He cannot afford to sell on credit on the same favourable terms as for ready money; because if he were to receive the money when he sold the article, he could lay it out to some advantage, or turn it over with other portions of his capital. By taking credit the buyer deprives the seller of the opportunity of making this profit, and accordingly he must pay a higher price for the article, the price being increased in proportion to the length of credit. It very ordinarily happens that the seller himself has purchased the article on credit; but this only serves to increase its price to the consumer, and does not prevent the last seller from charging for the credit which he gives and the risk of ultimate payment which he runs. Credit for a short period is almost essential in all great transactions; but when going beyond fair and reasonable limits, it acts most perniciously on trade, by inducing heedless speculation, and causing an undue increase in the number of dealers with little or no capital. An excessive competition among these penniless adventurers is the consequence; each strives to undersell the other with the hope of getting money to meet his obligations, and thus vast quantities of goods are sometimes thrown upon the market below the original cost, greatly to the injury of the manufacturer and the regular trader. What are technically designated 'gluts in the market' frequently ensue from causes of this nature.

Defoe, who wrote upwards of a century ago, makes the following observations on credit and over-trading in his 'Complete English Tradesman:'—'There are two things which may properly be called over-trading, and by both of which tradesmen are often overthrown: 1. Trading beyond their stock [or capital]; 2. Giving too large credit. A tradesman ought to consider and measure well the extent of his own strength: his stock of money and credit is properly his beginning; for credit is a stock as well as money. He that takes too much credit is really in as much danger as he that gives too much credit; and the danger lies particularly in this, if the tradesman overbuys himself—that is, buys faster than he can sell—buying upon credit, the payments perhaps become due too soon for him; the goods not being sold, he must answer the bills upon the strength of his proper stock—that is, pay for them out of his own cash; if that should not hold out, he is obliged to put off his bills after they are due, or suffer the impertinence of being dunned by the creditor, and perhaps by servants and apprentices and that with the usual indecencies of such kind of people. This impairs his credit, and if he comes to deal with the same merchant or clothier, or other tradesman again, he is treated like one that is but an indifferent paymaster; and though they may give him credit as before, yet depending that if he bargains for six months, he will take eight or nine in the payment, they consider it in the price, and use him accordingly; and this impairs his gain, so that loss of credit is indeed loss of money, and this weakens him both ways.

A tradesman, therefore, especially at his beginning, ought to be very wary of taking too much credit; it would be preferable to let slip the occasion of buying now and then a bargain to his advantage, for that is usually the temptation, than buying a greater quantity of goods than he can pay for, run into debt, and be in-

sulted, and at last ruined. Merchants and wholesale dealers, to put off their goods, are very apt to prompt young shopkeepers and young tradesmen to buy great quantities of goods, and take large credit at first; but it is a sense that many a young beginner has fallen into, and been ruined in the very bud: for if the young beginner does not find a vent for the quantity, he is undone; for at the time of payment the merchant expects his money, whether the goods are sold or not; and if he cannot pay, he is gone at once. The tradesman who buys warily, always pays surely, and every young beginner ought to buy cautiously. If he has money to pay, he need never fear goods to be had; the merchants' warehouses are always open, and he may supply himself upon all occasions, as he wants, and as his customers call.' It certainly 'is not possible in a country where there is such an infinite extent of trade as we see managed in this kingdom, that either on one hand or another it can be carried on without a reciprocal credit both taken and given; but it is so nice an affair, that I am of opinion as many tradesmen break with giving too much credit as break with taking it. The danger indeed is mutual and very great. Whatever, then, the young tradesman omits, let him guard against both giving and taking too much credit.'

Orders.—An order is a request from one dealer to another to supply certain goods. An order, when in writing, should be plain, explicit, and contain no more words than are necessary to convey the sense in a simple, courteous manner. The same rule applies to all letters of business, which, by the practice of trade, are confined to their legitimate object. He that affects a rambling and bombastic style, and fills his letters with long harangues, compliments, and flourishes, should turn poet instead of tradesman, and set up for a wit, not a shopkeeper. A tradesman's letters should be plain, concise, and to the purpose; no quaint expressions, no book phrases; and yet they must be full and sufficient to express what he means, so as not to be doubtful, much less unintelligible. We can by no means approve of studied abbreviations, or leaving out needful conjunctive terms and pronouns in trading letters; as, for example, 'Have just received yours of the 11th,' &c.; which ought to be expressed as follows—'I have just received your communication of the 11th instant,' &c. The leaving out of pronouns and other words in a business letter gives it a mean appearance.

Counting-house: in French, *bureau;* in Dutch, *kantoor.*—The counting-house is the office in which a merchant's literary correspondence, book-keeping, and other business is conducted. The English merchant's counting-house is a model of neatness and regularity. Its furniture consists chiefly of desks for the clerks, and the books of the establishment, which are secured at night in an iron or fire-proof safe. Almost every different business requires a different set of books, but the mode of keeping them is generally the same. The usual set of books comprises a day-book, in which sales on credit are individually entered as they occur; an invoice-book, for the entry of purchases; a ledger, into which all these entries are engrossed in separate accounts; a memorandum-book, for entering miscellaneous transactions; a cash-book, in which every payment or receipt of money is regularly entered; a letter-book, into which all letters are copied before they are sent off; and a bill-book, for the entering of bills payable and receivable. In large concerns there are various other books—as foreign-ledger, town-ledger, country-ledger, &c. The art of book-keeping is simple. It requires only a competent knowledge of arithmetic, and skill in penmanship, with a little training in the method of entering and posting accounts. The strictest care and accuracy are desirable. It is an understood rule, that no book should show a blot or erasure; a leaf also should never on any account be torn out, whatever blotch or error it contains. The reason for this scrupulous care is, that a merchant's books should be a clear and faithful mirror of his transactions, and an evidence of his integrity. In the case of misfortune in trade, or other circumstance, the books may be subjected to a rigid judicial examination, and the appearance of an erasure or torn-out leaf may lead to conjectures of an unpleasant nature and consequences. When an important error occurs in book-keeping, it is better to let it remain and write *error* below it, than to make a large erasure or to cut out the leaf.

From the books kept by a merchant, a condensed view of his affairs ought to be annually made up. This document contains an *inventory* or list of goods, money debts owing to the merchant, or other available property; also a contra list of all debts and other obligations due by the merchant. Both being balanced, the residue, whether for or against the merchant, is at once observable. Every person in trade, for at least his own satisfaction and government, should make up a *balance-sheet* of this nature annually.

Bill of Parcels.—An account or list of items of goods, given to their purchaser by the seller, or delivered along with the goods at the purchaser's house. Should a purchaser dispute the delivery of the goods, it is necessary to produce proof of the fact; when delivered to carriers, a receipt is usually given by subscribing the carrier's parcel-book.

Invoice.—A bill or account of goods, which is forwarded separately, announcing the date of their despatch, and the particular conveyance by which they are sent. If the seller fail to forward an invoice by post, and the goods be lost while on their way, the purchaser is answerable. The careful sending of invoices is an important duty of a merchant's clerk.

Carriers.—Persons who undertake to convey goods from one place to another, whether by land or water, are carriers; and the carrying-trade, as it is called, forms now a large and varied department of human industry. 'Carriers are bound to receive and carry the goods of all persons, for a reasonable hire or reward; to take proper care of them in their passage; to deliver them safely, and in the same condition as they were received (excepting only such losses as may arise from *the act of God or the king's enemies*); or, in default thereof, to make compensation to the owner for whatever loss or damage the goods may have received while in their custody that might have been prevented. Hence a carrier is liable, though he be robbed of the goods, or they be taken from him by irresistible force. On the same principle, a carrier has been held accountable for goods accidentally consumed by fire while in his warehouse.'—*M'Culloch.* Violent storms, tempests, and lightning, are considered to be 'the act of God,' or such as no human precaution could have averted, and no fraudulent intention could have produced.

Bill of Lading.—A formal acknowledgment or receipt given by sailing-masters for goods put on board their vessels, including a promise to deliver them safely, as marked and addressed, to their designed destination; always, however, excepting loss or injury by the act of God, the king's enemies, fire, or the dangers or accidents of the sea. This bill of lading is usually a printed form, filled up with writing, and concludes with the quaint and pious wish—'And so God send the good ship to her destined port in safety: amen.' A set of two bills of lading is furnished to the shipper of the goods; one of which he retains for his own satisfaction, and the other is forwarded by post, like an invoice, to the individual or company to whom the goods are sent. When the ship arrives at its destined port, this document can be employed to cause the captain of the vessel to deliver the goods therein mentioned.

A *Manifest* is a document containing a specific description of a ship, her cargo, and passengers. It is signed by the master at the place of lading.

Drawback.—A term used in reference to those duties of customs or Excise which are repaid by government on the exportation of the commodities on which they are levied. This repayment is made with a view to enable the exporter to sell his goods in the foreign market unburthened with duties. Before shipping goods upon which drawback is to be claimed, notice must be

given to the Excise, under whose inspection they are packed and sealed for shipment.

Debenture.—This is the name of a formal certificate employed to recover a certain amount of drawback of duties from the customhouse on goods exported. The exporter draws up and signs the certificate, the signature being attested by a magistrate; and being forwarded to the customhouse, it is compared with the return of the officer who has seen the goods packed and sealed. After a certain period has elapsed the duties are paid to the exporter. The meaning of this transaction is, that on exporting goods, any government duty that may have been imposed upon them is paid back to the exporter, so as to relieve the foreign or colonial receiver from the burthen of using taxed commodities. It also acts as a bounty on exportation.

The word 'debenture' has another application: it signifies a certificate of mortgage or loan on railway or other public works. Debentures of this class are documents briefly and simply expressed, conveying authority to the holder to seize the property impledged, on the event of the obligations of the deed not being fulfilled. Along with these debentures are given a sheet of separate orders to receive payment of interest at appointed terms. These orders being cut off for presentation for payment, are called *coupons*.

Customs—Excise.—The duties or taxes imposed upon goods entering or going out of the country are called *customs*, and those imposed upon goods at the period of their manufacture in the country are called *Excise duties*. Both form a prime element in the national revenue, and are levied by boards of customs and Excise, each having an extensive ramification of subordinate functionaries, for the imposition and collection of the duties. A customhouse is established at every principal port. Nearly all customs and Excise duties must be paid at the time the goods are passed through the hands of the officers of either department, and fall in the first instance on the merchant and manufacturer. They, however, enhance the price of the commodities, and are therefore ultimately paid by the consumer. For the accommodation of merchants, the customhouses in the different chief ports possess large warehouses or depôts for goods, called *bonded warehouses*. Goods subject to duty may, on importation, be consigned to these depôts, where they are allowed to remain till the merchant finds it convenient to remove them, and pay the accustomed duties. Until removed, therefore, the commodities in bond can hardly be said to be imported into the country, being in the condition of goods still lying in a foreign port.

Smuggling is the common term for contraband trading, or importing goods without paying duty. 'This is a practice,' says an experienced commercialist, 'which can only be stopped by a moderate tariff. When duties are excessive, experience has shown that an illegal traffic will be created which no power or ingenuity can put down. The abolition of smuggling, by wise and moderate legislation, is desirable, moreover, on higher grounds. The moral influence of the law is impaired when it first tempts to its own violation, and then punishes; for a sympathy is thereby created in favour of the breakers of it.' At present, Great Britain pays upwards of half a million annually for the protection of her customs against contraband trading!

Tariff, or *tarif*, is the term applied to a table of the articles subject to customhouse and Excise duties, with their respective rates.

Official and Declared Value.—All goods exported are entered in the customhouse books as of so much *official value*. This value is quite illusive as respects the real value of the articles. The official valuation is according to an estimate of the date 1694, without reference to the alteration of prices since that period. Knowing the fixed official price, we may be able to estimate the exact quantities, but this is a matter which few private individuals understand. The *declared value* is the price announced by the exporters of the goods, and amounts to nothing more than a rough estimate; it being necessary only to declare the value at something near the reality, for purposes of taxation, or making up reports of the export trade.

Lloyd's.—Lloyd is not the designation of any individual or of any company: it is a title used in reference to a set of subscription rooms, or coffee-house (originally kept by a person of the name of Lloyd), situated in the Royal Exchange buildings, London. One of the rooms at Lloyd's (for a historical account of which see 'Chambers's Journal,' No. 111, New Series) is devoted to subscribers who follow the profession of marine insurers, technically called *underwriters*, from their writing under, or subscribing to, certain obligations in deeds presented for their acceptance. When a person wishes to insure a ship, or goods in a ship, against damage or loss at sea, he offers the risk to these underwriters, and they are at liberty to accept it for a specified premium. The policy, or deed expressive of the insurance, is usually signed by more than one underwriter, so as to divide the risk. Lloyd's is not only a centre point in the metropolis for all sea-insurance business, but is the place to which every species of intelligence respecting shipping is forwarded from all parts of the world; and this information is exhibited publicly in one of the rooms for the inspection of all. The intelligence is for the most part sent by appointed agents, one part of whose duty consists in investigating the cause of damage to vessels, and taking charge of wrecked property, for behoof of the underwriters, whoever they may be. The lists made up and exhibited at Lloyd's furnish authentic information for the use of merchants and shippers of goods all over the United Kingdom.

Vendue.—This is a colonial phrase, used instead of *public auction*. To sell goods at vendue is to dispose of them at auction. The place of sale is sometimes called 'the Vendue.'

Dutch Auction.—In common auction, the highest bidder by competition is the purchaser; but according to the process of sale called Dutch Auction, there is a different mode of determining the successful bidder. According to this plan, the article is put up at a certain nominal price, which is gradually lowered, and the first who speaks and offers the sum mentioned by the auctioneer is at once knocked down as the purchaser. This is the fairest mode of auctioneering; it prevents competition, and the article brings its exact value—that which it is worth in the estimation of those present.

Insolvency, Bankruptcy.—When a person is not in circumstances to pay his debts in full, he is *insolvent*, which is nearly equivalent to being bankrupt: the term bankrupt, however, is more commonly applied to one who is legally announced or gazetted as being insolvent. The term bankrupt is derived from *bancus*, a bench, and *ruptus*, broken; in allusion to the benches formerly used by the money-dealers in Italy, which were broken in case of their failure to pay their debts. The law prescribes a certain form of procedure in the case of commercial insolvency, which has the effect of deliberately investigating the cause of the misfortune, and relieving the bankrupt from all obligations, on yielding up his entire property. Only persons in trade are entitled to the benefit of this bankrupt law, all others being excluded; so that, in the event of their insolvency, they must submit to the common laws respecting debtors, which are in some respects very rigorous. A bankrupt who has received a discharge or certificate from a competent authority, being released from all pecuniary claims, may again enter business for his own behoof without any fear of molestation; but a debtor who has merely taken the benefit of the Insolvent Act in England, or process of *Cessio Bonorum* in Scotland, though immediately relieved from prison, and left at liberty to pursue any line of industry, the property he may accumulate is at all times liable to seizure by his former creditors.

A commission of bankruptcy in Scotland is entitled a *sequestration*, meaning that the property of the bankrupt is officially sequestered, or taken possession of, on

behalf of his creditors. A payment of so much per pound by a bankrupt to his creditors, they agreeing to receive this sum in lieu of the full amount of his debts, is termed a *composition*; and when such a composition is made, and paid at different instalments, each instalment is spoken of as a *dividend*. The term dividend is also applied to the profits divided amongst the proprietors of joint-stock companies, and the like. The persons to whom the realisation, management, and distribution of the estate of a bankrupt are committed, are termed his *assignees*.

A *monopoly* is properly a privilege granted by license, conferring on an individual or company the sole right of purchasing and disposing of, making or using, a certain specified article. The term, however, is often used to denote the engrossing of commodities with the view of selling them at a high price. Monopolies granted by royal license were at one time frequent in England; but are now entirely abolished, with the exception of patents for inventions or improvements, and these exist only for a limited number of years.

Price-current is the technical term for a list showing the market prices of commodities.

MONEY.

Origin and Nature of Money.—In a rude state of society, exchanges are made by bartering one article for another, according to some kind of understood value. 'But when the division of labour first began to take place,' says Smith, 'this power of exchanging must frequently have been very much clogged and embarrassed in its operations. One man, we shall suppose, has more of a certain commodity than he himself has occasion for, while another has less. The former, consequently, would be glad to dispose of, and the latter to purchase, a part of this superfluity. But if this latter should chance to have nothing that the former stands in need of, no exchange can be made between them. The butcher has more meat in his shop than he himself can consume, and the brewer and the baker would each of them be willing to purchase a part of it; but they have nothing to offer in exchange, except the different productions of their respective trades, and the butcher is already provided with all the bread and beer which he has immediate occasion for. No exchange can in this case be made between them. He cannot be their merchant, nor they his customers; and they are all of them thus mutually less serviceable to one another. In order to avoid the inconveniency of such situations, every prudent man in every period of society after the first establishment of the division of labour, must naturally have endeavoured to manage his affairs in such a manner as to have at all times by him, besides the peculiar produce of his own industry, a certain quantity of some one commodity or other, such as he imagined few people would be likely to refuse in exchange for the produce of their industry.

Many different commodities, it is probable, were successively both thought of and employed for this purpose. In the rude ages of society, cattle are said to have been the common instrument of commerce; and though they must have been a most inconvenient one, yet in old times we find things were frequently valued according to the number of cattle which had been given in exchange for them. The armour of Diomede, says Homer, cost only nine oxen; but that of Glaucus cost a hundred oxen. Salt is said to be the common instrument of commerce and exchanges in Abyssinia; a species of shells in some parts of the coast of India; dried cod at Newfoundland; tobacco in Virginia; sugar in some of our West India colonies; hides or dressed leather in some other countries; and there is at this day a village in Scotland where it is not uncommon, I am told, for a workman to carry nails instead of money to the baker's shop or the alehouse.

In all countries, however, men seem at last to have been determined by irresistible reasons to give the preference for this employment to metals above every other commodity. Metals can not only be kept with as little loss as any other commodity, scarce anything being less perishable than they are, but they can likewise, without any loss, be divided into any number of parts, as by fusion those parts can easily be re-united again—a quality which no other equally durable commodities possess, and which, more than any other quality, renders them fit to be the instruments of commerce and circulation. The man who wanted to buy salt, for example, and had nothing but cattle to give in exchange for it, must have been obliged to buy salt to the value of a whole ox or a whole sheep at a time. He could seldom buy less than this, because what he was to give for it could seldom be divided without loss; and if he had a mind to buy more, he must, for the same reasons, have been obliged to buy double or triple the quantity—the value, to wit, of two or three oxen, or of two or three sheep. If, on the contrary, instead of sheep or oxen, he had metals to give in exchange for it, he could easily proportion the quantity of the metal to the precise quantity of the commodity which he had immediate occasion for.

Different metals have been made use of by different nations for this purpose. Iron was the common instrument of commerce among the ancient Spartans; copper among the ancient Romans; and gold and silver among all rich and commercial nations.

Those metals seem originally to have been made use of for this purpose in rude bars, without any stamp or coinage. Thus we are told by Pliny, upon the authority of Timæus, an ancient historian, that till the time of Servius Tullius the Romans had no coined money, but made use of unstamped bars of copper to purchase whatever they had occasion for. These rude bars, therefore, performed at this time the function of money.

The use of metals in this rude state was attended with two very considerable inconveniences: first, with the trouble of weighing; and secondly, with that of assaying them. In the precious metals, where a small difference in the quantity makes a great difference in the value, even the business of weighing with proper exactness requires at least very accurate weights and scales. The weighing of gold, in particular, is an operation of some nicety. In the coarser metals, indeed, where a small error would be of little consequence, less accuracy would no doubt be necessary. Yet we should find it excessively troublesome if, every time a poor man had occasion either to buy or sell a farthing's worth of goods, he was obliged to weigh the farthing. The operation of assaying is still more difficult, still more tedious; and unless a part of the metal is fairly melted in the crucible, with proper dissolvents, any conclusion that can be drawn from it is extremely uncertain. Before the institution of coined money, however, unless they went through this tedious and difficult operation, people must always have been liable to the grossest frauds and impositions; and instead of a pound weight of pure silver or pure copper, might receive in exchange for their goods an adulterated composition of the coarsest and cheapest materials, which had, however, in their outward appearance been made to resemble those metals. To prevent such abuses, to facilitate exchanges, and thereby to encourage all sorts of industry and commerce, it has been found necessary, in all countries that have made any considerable advances toward improvement, to affix a public stamp upon certain quantities of such particular metals as were in those countries commonly made use of to purchase goods. Hence the origin of *coined money*, and of those public offices called mints—institutions exactly of the same nature with those of the aulnagers and stampmasters of woollen and linen cloth. All of them are equally meant to ascertain, by means of a public stamp, the quantity and uniform goodness of those different commodities when brought to market.'—*Smith's Wealth of Nations*, book i. chap. 4.

It will be understood from these explanations that money is only an article which can be conveniently used in exchanging. In itself, or as relates to its own intrinsic qualities, it is a thing but of small value. Gold and silver, or the precious metals, of which money is usually made, are chiefly brought from the mines of South America, and are commercially valued according to the cost of their production and their supply and demand, as is the case with every other object in trade. If an over-abundance of any of these metals be easily obtained, and the demand be not increased, the value is immediately lowered; and if the supply is obtained with difficulty, while the demand remains steady, or is increased, the value is heightened. It cannot be too strongly impressed on the mind of the reader, that money is but a metallic representative of something which has been given for it. To a misunderstanding regarding this apparently very simple circumstance, much human misery may be attributed. It has too often been the feeling of communities, that if they possessed gold they possessed riches, and not a mere article for facilitating commerce—an article which, from its uses in this respect, is itself a commodity. The most startling illustration of this fallacy is to be found in the history of Spain. Before the working of the gold mines in their American possessions, the Spaniards were a rich and prosperous commercial people; but when they began to find gold, they thought they had got at their hand that for which they formerly laboured, and that, like a poor industrious man who has unexpectedly succeeded to an estate, they need now work no longer. To prevent their riches from disappearing, the law prohibited the exportation of the precious metals, and thus effectually shut the door against the only way in which they could be made sources of wealth—exportation as an article of commerce. In that view, and in that alone, was there any advantage in the possession of gold; and even had it been employed in the most advantageous manner, it would not have been so profitable as many other means of employing capital and labour; for, as already remarked, the peculiarity which makes gold so useful as a measure of value is, that the labour usually expended in producing it bears so constant a ratio to the quantity realized, that but small profits are made from its production.

The manner in which the Spaniards became acquainted with the treasures of South America tended to nourish the delusion. They found a considerable quantity of gold in the possession of the natives, which they speedily seized. They found also native gold in the streams. Thus, by an accidental circumstance, such as that of finding a hidden treasure, they became possessed of money without working for it. They did not reflect that if this lasted, gold would cease to be the representative of value which it was, and would be of no further service in commerce than as an extremely beautiful material for manufactures, which would fluctuate in value with the tide of fashion. When they could procure the mineral only by the result of hard labour, they still had the same preposterous feeling that they were possessed, not of the means of making wealth, but of wealth itself; and dearly did they pay the penalty. While starvation desolated the land, and the highest grandees could not command so much of the produce of ordinary commercial industry as a glass window, every wretched dwelling glittered with mountains of plate.

Gold, it is necessary to repeat, is simply a commodity—a commodity which we import; and if we can export it profitably, why not do so? If the country in question will take nothing from us but gold, then it is either worth our while to buy gold for the purpose of sending to it, or it is not. If it is not worth while, then the trade will not be carried on at all. If it is worth while, then the trade is on the whole a profitable one. If we import sugar from the Spanish settlement of Manilla, and export it to Germany, this is called 'the carrying-trade,' and quite correctly; but it seems to be thought that if we import gold from South America, we must keep our hands upon it, otherwise we shall be ruined. It is commonly said that we can only establish a profitable trade when we pay in our own manufactures. Now paying in gold is, after all, indirectly paying with our own manufactures, for (except the comparatively trifling quantity that may have been taken in war) there is not an ounce of bullion in the country that has not been obtained in exchange for some article produced either by our manufacturing or agricultural industry. Let him who doubts this position, try if he can discover any other method by which gold can have found its way to this country.

Coined Money.—Gold and silver, as we have said, are chiefly brought from the mines of South America. They are generally imported in the form of bars, and in this rude state are commercially named *bullion*. The price of bullion in the market is liable to fluctuations, according to the cost of production, the supply, and the demand. However, the variation is never very great, and has little sensible effect on the coinage. It is customary to estimate the purity of gold by an imaginary standard of 24 carats. The carat is a small weight of universal use, containing 4 grains. It originated from the carat or kaura, a small bean, used by the Abyssinians for weighing gold. Diamonds are also weighed by it. If in a piece of gold weighing 24 carats there be 1-24th of alloy, then the piece is 1 below the standard. What is called jewellers' gold is seldom purer than 20 fine to 4 of alloy—the alloy being usually silver, but sometimes copper, which gives a deeper red tinge to the metal. Perfectly pure gold is never seen either in trinkets or coins, for it is too ductile, and for that and other reasons requires a certain quantity of alloy. Sovereigns, and other modern English gold coins, contain 1-12th of alloy; but this twelfth is not reckoned as gold in point of value. At present the gold coin of Great Britain is issued at very nearly its precise market value as bullion. A pound weight of gold, of 22 carats' fineness, produces coins to the amount of £46, 14s. 6d., which is about the price at which bullion sells for in the market. Thus the gold of our currency is coined free of expense, or at the rate of £3, 17s. 10½d. per ounce—the weight of a sovereign being 5 dwt. 3·274 grains. In coining silver, government is allowed by the act 56 Geo. III. a profit or seignorage of about 6 per cent.; the pound weight of silver, which should produce 62s., being coined into 66s.—that is, at the rate of 5s. 6d. per ounce. Our silver coins being therefore of a little less real value than the sums they represent, they are not liable to be melted down by silversmiths for the manufacture of articles in their trade.

Till the year 1816, on the occasion of a new coinage, the silver shilling was the standard of money, though, for convenience, the pound of 20s. was the principal sum named in commercial transactions. The act 56 Geo. III. rendered gold the principal standard, and made silver subsidiary to it; since which period no more than 40s. are a legal tender; that is to say, no one is bound to accept of more than 40s. in silver in payment of any debt or demand. The legal tender above 40s. is in sovereigns; but in point of fact an order on the Bank of England is considered equivalent.

At present gold is issued in sovereigns (of twenty shillings) and half-sovereigns: the issue of double sovereigns is also authorised, but none are in circulation. Silver is issued in crowns (of five shillings), half-crowns, shillings (of twelve pence), sixpences, and groats, or fourpences; a few pieces for 3d., 2d., and 1d., called *Maundy Money*, are also made for the purpose of distribution as alms by the sovereign, but they are not in general circulation.

The copper coinage, consisting of pennies, halfpence, and farthings, is issued from the mint at the rate of £224 per ton, being more than 100 per cent. above its market value; in other words, a penny-piece is intrinsically worth no more than a halfpenny. Formerly, the pieces usually known as old pennies were larger; but in consequence of a rise in the value of copper

in 1806, it has since been thought advisable to adopt the rate above mentioned.

The coined money of Great Britain is the most elegantly executed, and among the purest in the world. The greater part of the continental coinage is poorly executed, and basely alloyed. In Holland, and most of the German states, the coins legally current as silver money are apparently one-third brass, and resemble the counterfeit shillings and sixpences of a former period in England. In France and Belgium, the new gold and silver coins are handsome, and so likewise are the large gold and silver pieces of Prussia. The coins and medals executed by direction of Napoleon in France are in a high style of art.

Money of the current and standard coinage is frequently signified by the term *sterling*, as 'one pound sterling,' &c. With respect to the origin of the word sterling there are three opinions: the first is, that it is derived from Stirling Castle; and that Edward I. having penetrated so far into Scotland, caused a coin to be struck there, which he called Sterling: the second opinion derives it from the figure of a bird called starling, which appears about the cross in the ancient arms of England: the third most probably assigns its true origin, by deducing it from Esterling; for in the time of Henry III. it is called *Moneta Esterlingorum*, the money of the Esterlings, or people of the East, who came hither to refine the silver of which it was made; and hence it was valued more than any other coin, on account of the purity of its substance. The denomination of the weights and their parts is of the Saxon or Esterling tongue—as pound, shilling, penny, and farthing, which are so called in their language to the present day. The term sterling is now disused in England in all ordinary transactions, but is still used in Scotland, to distinguish sums from the ancient money of the country, as referred to in old deeds and notices of pecuniary transactions. The old Scots money, previous to the Union of 1707, was in pounds, shillings, and pence, but these were only a twelfth of the value of sterling money of the same denomination: thus a pound Scots was only twentypence sterling. The word sterling is also in use in the colonies, to distinguish the legal standard of Great Britain from the currency money in these places.

The following is a short explanation of the origin of the principal terms used in reference to coined money. The word *money* is from the temple of Juno *Moneta*, in which money was first coined by the ancients. *Pecuniary* is from *pecus*, a flock—flocks and herds of animals being originally equivalent to money, or things constituting wealth. *Cash*, in commerce, signifies ready money, or actual coin paid on the instant, and is from the French word *caisse*, a coffer or chest in which money is kept. *Pound* never was a coin; the term was originally employed to signify a pound weight of silver, but afterwards it was applied to mean 20s. in tale, or by counting. *Guinea* took its name from the coast of Guinea in Africa, whence the gold for it was originally brought; at first, the piece was current at 20s., afterwards it was equal to 21s. 6d., and finally settled at 21s. In the present day the guinea is not coined, and the term only remains to indicate 21s. Honorary fees and gifts are still usually reckoned in guineas, though paid in other money. *Shilling* and *penny* are both from Saxon words: the penny was first coined in silver. *Groat* was a name given to silver pieces equal to four pennies in value, coined by Edward III.: the word groats is a corruption of *grosses*, or great pieces, and was given to distinguish this larger coinage from pennies or small coins. *Farthing* is a corruption of *fourthing*, or the fourth part of a penny.

The coining of money forms one of the exclusive privileges of the crown, and the counterfeiting of it constituted formerly the offence of high treason. At present the integrity of the coinage is guarded by a recent act, under which persons counterfeiting or impairing it are liable to imprisonment and transportation. Penalties are also imposed on those uttering false coins—having three or more such pieces in their possession with intent to put off the same—and on those making, mending, or having in possession any coining tools. The loss on coins by ordinary tear and wear has been variously estimated. According to experiments made at the Mint in 1833, the waste per cent. per annum appears to be—on sovereigns, from 9d. to 10½d.; on half-sovereigns, from 1s. to 1s. 6½d.; on half-crowns, from 2s. to 3s.; on shillings, from 2s. 3d. to 6s.; and on sixpences, from 6s. to 8s. These results—making allowance for the greater use of some coins than others—confirm the general estimate that standard gold possesses about four times the durability of silver.

A currency of gold is, therefore, the most secure and permanent, and the pieces are received for their proper value in all countries. But notwithstanding these advantages, a metallic currency alone is quite unsuitable in highly-commercial communities. There is no adequate importation of the precious metals at the ordinary value to supply material for a purely metallic currency; and if it were possible to provide a sufficient supply, the inconvenience and risk of loss to individuals from using coins only in all mercantile transactions would be too great to be patiently borne. A heavy loss would also be incurred annually by government from tear and wear, which it would be impolitic to avert by imposing a proportionate seignorage. In these and other points of view, a currency of metal only would be exceedingly unsuitable to the existing condition of society and commerce in Britain. Something more convenient requires to be employed as a medium of exchange and representative of the enormous sums which are daily transferred from one to another all over the country.

Paper Money.—The deficiencies of a metallic currency are compensated by the use of paper money. Paper money is in the form of small pieces of paper, each purporting to be an obligation or promise to pay a certain sum which is specified upon it. Whether passing by the name of a bank-note, a promissory-note, or bill of exchange, the principle on which it is issued is the same—an express obligation on the issuer to pay the specified sum in coined money on demand, or at a certain date which is mentioned. The notes of this kind issued by a bank pass from hand to hand, any holder having it in his power at any time to demand fulfilment of the obligation from the bank; but in the case of a bill of exchange, which is a promise by a private party, it is presentable for payment only at a specified period. Bank-notes and bills together constitute the paper currency of the country, and are of prodigious use in carrying on commercial transactions.

Bills of Exchange were first used for the purpose of settling pecuniary transactions between individuals at a distance from each other, and were therefore convenient expedients to avoid the risk of sending actual money to a creditor. This may be explained as follows:—If A, a merchant in London, have a debtor B and a creditor C, both in Paris, instead of sending money to C, and getting money sent to him by B, he may give C an order on B to pay the debt over at once to him. This is a bill of exchange in its simplest form. Suppose, however, that A has a creditor in Paris, but no debtor, while his neighbour E has a debtor, but no creditor; A may pay the money to E which the French debtor owes him, and obtain from him an order on his debtor to pay A's French creditor. This order he will be said to purchase. It will be an accommodation to him or to the other party, according to circumstances. In the complicated arrangements of modern commerce the individual debtors and creditors are lost sight of. If a person has a sum to transmit to another country by such an order, the rate at which he will obtain it will depend on the pecuniary relations of the two places taken in the main. If there is more money payable at the moment by people in London to people in Paris than there is payable by those in Paris to those in London, there will be a demand for orders on Paris, and a premium will be payable for the accom-

modation by those who want them. In this case the *exchange* will be said to be against London. In Paris, on the other hand, there will be more people ready to give such drafts than there are in want of them, and those who dispose of them must do so at a discount. The rate of exchange is from this circumstance said to be in favour of Paris. The premium in the one case, and the discount in the other, will be measured by the balance due by London to Paris over what is due by Paris to London; and the principal sum to be met by the rate of exchange will be the expense of transmitting that balance in specie, unless the accounts can be adjusted by bringing transactions with some other community into the circle.

We may vary this explanation of the principle of exchange as follows:—Great Britain, like every other country, is exposed to a drainage of its metallic currency, by the balance of trade falling against it. As long as our exports are equal to our imports they will balance each other; the bills drawn in England against foreign countries will be balanced by bills drawn in foreign countries against England. In this state of things the exchange is said to be at *par*, or even. If our exports exceed our imports, then foreigners must send actual money for the overplus, because they have not occasion to remit bills for the amount. If our imports exceed our exports, we must in the same manner remit the overplus in actual money. Thus a dearth and scarcity of corn in England will cause a drainage of the precious metals, because our imports of that article rise to a large amount, or much beyond the value of the manufactured goods exported. The exchange is then said to be against England.

The multifarious transactions taking place between merchants in Britain and America cause an incessant process of payment by the intervention of bills of exchange, many thousands of pounds being paid away daily in their accounts with each other without the aid of any metallic money, except perhaps a few coins for small odd sums.

Here is a common form of drawing a bill of exchange:—

£100. LONDON, *5th August* 1840.

Three months after date, pay to me or my order the sum of one hundred pounds, value received.

To Mr THOMAS STYLES, Merchant, JOHN NOKES.
Cripplegate, London.

The bill being drawn in this form, Mr Styles *accepts* it, by writing his name either below that of Mr Nokes, or across the face of the writing. Mr Nokes, who is called the *drawer*, now endorses the bill, by writing his name on the back of it, and thus the bill becomes *negotiable paper*. It may be paid away to a third party; and he endorsing it below Nokes's name, may pay it away to a fourth; and he endorsing it in the same manner, may pay it away to a fifth; and so on. Thus the bill may pass from hand to hand, on each occasion liquidating a debt of £100, till the day of payment by the original acceptor arrives, when it is duly presented by the last holder. Instead of running this course, the bill may at any period be *discounted* by a bill-broker or banker. The discounting of a bill consists in giving the money for it, less a certain sum for *interest*. Interest is a charge for the loan of money, and is ordinarily reckoned by *per cent.* Thus 5 per cent. (or centum) per annum signifies a charge of £5 for every £100 for one year, which is equal to a shilling for each pound. Five per cent. is the highest legal interest chargeable in the United Kingdom on all money lent in ordinary circumstances; but for discounting bills or promissory-notes, a larger per centage may now be legally taken. When a bill for £100 for three months (or fourth part of a year) is discounted at 5 per cent. interest, a charge equal to the fourth part of £5 is made by the discounter, and this is his profit for the loan of the money for that period. Interest for a single day on any sum may be easily calculated by a rule in arithmetic; but merchants and bankers, for the sake of expedition and correctness, generally consult a set of printed interest tables or ready reckoner.

According to a practice of old standing, bills are not presentable for payment till the third day after that which is specified for them to fall due. The three days allowed are called the *days of grace*. Thus a bill drawn on the 5th of August, at three months, is not legally due till noon of the 8th of November. In some countries the period of grace is much longer than three days.

Bills of exchange are occasionally drawn in the form of promissory-notes; as, for example:—

£100. LONDON, *5th August* 1840.

Three months after date, I promise to pay to Mr John Nokes, or order, the sum of one hundred pounds, value received. THOMAS STYLES.

When in this form, no signature is written across the front of the document—it is only endorsed by the creditor. Promissory-notes are in every respect liable to the same regulations as bills. Both promissory-notes and bills must be written on stamps of the proper price; if on stamps of an inferior value, they are not negotiable, and cannot be protested. The protesting of a bill is simply the marking of a notary-public that it has not been duly paid on presentation; which marking, or *noting*, forms the warrant for the issuing of legal diligence by the competent authorities. If not protested on the day it has fallen due, this step cannot be taken afterwards, and the bill remains a mere evidence of the debt, to be produced in the course of a regular and perhaps tedious prosecution. Men in business are careful to present their bills for payment on the exact day they become due. When the acceptor of a bill fails to pay the amount, the holder can fall back for payment on any of the endorsers, or the drawer.

Bills are sometimes drawn at *sight*, or so many days after sight; for example:—

£50. LONDON, *5th August* 1840.

Ten days after sight, pay me or my order the sum of fifty pounds, value received.

To Mr ISAAC WALTERS, JOHN JENKINS.
Cheapside.

A bill of this kind is usually drawn by a person at a distance from his debtor, and on writing it out and endorsing it, he transmits it to an agent (or probably a creditor of his own) in the town in which the debtor resides. The agent having received it, hastens with it to the debtor to be *sighted*, which consists in the debtor, as, for instance, the above Mr Walters, accepting it, by signing his name, and marking the day on which he has done so. The bill is now a negotiable instrument, and on the third day after the day specified it is presentable for payment. This may be called a convenient way of getting ready money or prompt payment of any sum from a debtor. It is very common to draw *foreign bills of exchange* at so many days after sight. These bills are of precisely the same nature as inland or home bills of exchange; but for the sake of security in transmission, they are drawn in sets of three. The following is a common form:—

£100. MONTREAL, *18th June* 1840.

Sixty days after sight, pay this my first bill of exchange (second and third of the same tenor and amount being unpaid), for the sum of one hundred pounds sterling, value received.

To Messrs BROWN and JONES, SAMUEL ROBERTSON.
Merchants, Bristol.

This bill being endorsed by Mr Robertson, is transmitted to England (probably in liquidation of a debt of the same amount), and is presented to Messrs Brown and Jones to be sighted, and is afterwards presented to them for payment accordingly. The agent or individual to whom it is sent, receives by the next packet the second bill of the same tenor. Should the first have been lost by shipwreck, this second is available; but otherwise it is of no use, and may be destroyed. The third bill of the same tenor is retained by the

drawer till he learn whether the first or second have been received; if both have been lost, it is transmitted. Bills of this description are rarely sent by the actual drawer. They are usually paid away or sold on the spot to another party, who transmits them to a creditor of his own, and he negotiates the payment. The abundance or scarcity of foreign bills of exchange affects their price. If many merchants be in quest of bills of this nature to send abroad, and there be few having them to dispose of, they rise to a premium; in other words, a merchant in New York may give £105 for a bill for £100 payable in England. If, on the contrary, there be many bills and few buyers, they will be disposed of at a discount. These differences constitute what is called *the differences of exchange*.

Bills of exchange serve three useful purposes in commerce. 1. A bill puts a debt in a tangible form: for example, instead of leaving a debt of £100 to be paid at an indefinite period, so as to protract its settlement, let it be put in the shape of a promise to pay, and the creditor becomes satisfied that he now possesses the power to compel payment at a certain and not very distant period. 2. A bill is a negotiable instrument. If the parties be trustworthy, it may be discounted for cash; and thus, while the creditor will receive his money, less a trifle for discount, the debtor is left unmolested till the final day of payment. 3. A bill is a convenient representative of money, which may be sent from place to place in a letter, and if accidentally lost, its payment may be stopped, and a new bill forwarded to the proper destination.

The *currency* or *money* of the United Kingdom is about £26,000,000 of gold and silver coin, and £32,000,000 of bank-notes, chiefly of the value of five and ten pounds—total, £58,000,000. As nearly all large payments, however, are made by bills of exchange and drafts on bankers, there is an enormously large currency of that kind. It has been calculated that the amount of bills, promissory-notes, and bankers' drafts in circulation at any one time cannot be much less than £122,000,000. The centre of all the great money transactions of the British Empire is London, in which is situated the Bank of England, or principal banking institution. The amount of foreign and inland bills of exchange and drafts payable in London daily, is estimated at £4,000,000. In Scotland, which is justly celebrated for its well-conducted banking institutions, the money currency is chiefly one-pound bank-notes and silver. On the 7th of October 1848, the note circulation of the United Kingdom was as follows:—Bank of England, £17,505,718; private banks, £3,681,544; joint-stock banks, £2,666,749; Scotland, £3,136,516; Ireland, £4,506,421. The money coined in 1847 consisted of 110,400 lbs. gold, yielding £5,158,440; of 38,100 lbs. silver, yielding £125,730; and of 40 tons copper, yielding £4960 sterling.

BANKS.

Origin of Banks.—The term *bank*, in reference to commerce, signifies a place of deposit of money, and is derived from the Italian word *banco*, a seat or bench, the first custodiers and dealers in money in Italy having been Jews, who sat on benches in the market-places of the principal towns. It is worthy of remark, that in the infancy of almost all modern civilised nations, the earliest money-dealers were Jews, and in the present day persons of that nation are the chief commercial negotiators in barbarous countries. Their acute intelligence, patient industry, disregard of local attachments, and kindred qualities, have in all ages fitted the Jewish people for this course of life.

About the reign of Charles I., Jews and goldsmiths, to whom valuable property had been assigned for safe custody, began to exercise the profession of bankers and money-dealers in England; but till a much later period there were several eminent bankers in London who still kept goldsmiths' shops.

On the continent of Europe regular banking commenced much earlier than in this country. The Bank of Venice was established as early as 1171, the Bank of Amsterdam was begun in 1609, and that of Hamburg in 1619. Regular banking establishments were formed in England and Scotland shortly after the Revolution. The Bank of England began in 1694, and the Bank of Scotland in 1695, since which period banks of various characters have been instituted in all the principal towns in the United Kingdom.

Business of Banking.—A bank is a commercial institution, established and conducted by private individuals for their own behoof, or by joint companies. Like a merchant's counting-house, it consists of various officials—a manager, cashier, clerks, &c. including tellers, or persons for receiving and paying out the money. Banks are usually reckoned to be of two kinds—banks of *deposit*, and banks of *issue*. By deposit it is meant that the bank takes charge of deposits of cash, which it is ready to restore on demand. Some banks of this nature allow interest on the sums received, and others do not do so; all, however, of necessity, make use of the money so deposited, by lending it out at a certain rate of interest, and thus compensate themselves for their trouble. The loans are most commonly in the form of discounts of bills, and occasionally advances on heritable property, or other securities. Banks of issue transact all the ordinary business of banks of deposit, and, in addition, issue notes of their own instead of actual cash or the notes of others. Almost all banks in this country are banks both of deposit and issue; they at least issue notes as far as the law allows them, which is to the extent of notes of £5 in value and upwards. The only banks permitted to issue below £5 are those in Scotland, for which a peculiar law exists.

Although banks are thus at liberty to issue notes to any extent, it is not to be supposed that they do so without a certain degree of restraint. The expense of manufacturing notes, notwithstanding that each requires a stamp, is a comparatively small check; the main restraint on over-issuing consists in the obligation to pay the sum, which the note expresses, on demand. When, therefore, a banker discounts a bill for £100, and gives out one hundred notes of £1 each, he encounters the risk of having these notes returned upon him, and a demand made for them in cash within the compass of a day or two thereafter. This risk is increased by the practice among bankers of never issuing the notes of others. They are anxious enough to push forth on a safe principle their own paper; but when they receive deposits or payments in the paper of another bank, they use all convenient speed in demanding cash from that bank in exchange for its notes. The notes of any given bank being received purely on a principle of good faith or credit, it is of great importance that the bank should do nothing to incur the suspicion of being incapable of retiring its notes. When any suspicion of this nature arises, the public, who are ignorant probably of the true circumstances, rush to the bank for gold in exchange for its notes. This kind of panic is called a *run*. Bankers are always naturally anxious to issue their notes to as great an extent as is consistent with safety to the institution. The measure of this safety is the extent of capital at command to liquidate demands for cash. To accommodate the amount of this capital to the probable necessities of the case, is the point in banking for which the greatest skill is required, because if much capital is kept lying useless in the coffers of the bank, there is a loss of interest which may be ruinous; whereas if too little is retained, a sudden run might utterly destroy the credit of the concern. When banking is managed with prudence, there is a certain amount of money kept at interest in the funds or government securities, upon which, if need be, an order is given. Thus a safety fund is established, whereon to fall back in case of emergency. A share of the subscribed and paid-in capital of the shareholders of the bank forms this safety fund; and it may be taken as a general rule, that where a bank is provided with

no such security, but issues notes on the faith of the fund it may chance to have on hand, then that bank is trading on a principle alike dangerous to itself and the public. A banker who unites enterprise with prudence takes every available means to extend the circulation of his notes in as minute and distant channels as possible; for as long as a note is out, an interest is being received for the capital which it represents. In other words, when a pound note is out, it represents a sovereign which has been deposited or given for it, and which sovereign is employed in a fund in some manner of way at interest, for the advantage of the banker.

On considering the various operations connected with banking, it will be found that, independently of the impulse and elasticity created by the facilities given to commerce, the direct and primary effect of them is the employment of waste money. A bank gathers, as it were, the money of a district into its hands, and allowing each man to use as much of his own share as he requires at the time, keeps the remainder likewise in employment, which would not have been the case had it remained in its owner's hands.

The rapidity with which all kinds of payments are made, and therefore the frequency with which money can be used, through the instrumentality of banks, form the most striking feature. In a bank office the same sum of money will have been made the means of paying its amount a dozen of times over in a day without being once uplifted. A, who is due B £100, gives a cheque for the sum, which will make it stand in his name instead of A's. B gives a similar cheque to C; C to D; and so on. 'The transfer of lodgments,' says Mr Gilbert, 'is extensively practised in our own times. If two persons, who have an account in the same bank, have business transactions with each other, the debtor will pay the creditor by a cheque upon the bank. The creditor will have this cheque placed to his credit. The amount of money in the bank remains the same; but a certain portion is transferred into a different name in the banker's books. The cheque given by the debtor is an authority from the debtor to the banker to make this transfer. Here the payment between the creditor and debtor is made without any employment of money. No money passes by one to the other: no money is paid out or received by the banker. Thus it is that banks of deposit economise the use of the circulating medium, and enable a large amount of transactions to be settled with a small amount of money. The money thus liberated is employed by the banker in making advances, by discount or otherwise, to his customers. Hence the principle of transfers gives additional efficacy to the deposit system, and increases the productive capital of the country. It matters not whether the two parties, who have dealings with each other, keep their accounts with the same banker or with different bankers; for as the banks exchange their cheques with each other at the clearing-house, the effect as regards the public is the same.'*

London, in which the government funds are managed, and where all the great pecuniary transactions of the empire may be said to centre, furnishes a remarkable instance of the economising of money by the interchange of cheques or drafts among bankers. Each banking house in the metropolis sends daily the drafts it has received on other banking institutions to a place of common resort, called the clearing-house. Here a clerk from each bank attends and exchanges drafts. It is understood that the accounts balanced every day at this clearing-house amount to £8,000,000 sterling, the settlement being effected by the intervention of only about £250,000 in notes and cash.

Bank of England.—This institution, which is the largest and most important banking establishment in the world, was projected by William Paterson, a Scotchman, and received its charter of incorporation July 27, 1694. It was constituted as a joint-stock association, with a capital of £1,200,000, which sum was lent at interest to the government of William and Mary, at the time in a state of embarrassment. At its very outset, therefore, the Bank of England was a mere engine of government; and in a lesser or greater degree it has enjoyed this character through all the stages of its subsequent history. According to its charter, the management is committed to a governor, lieutenant-governor, and twenty-four directors, elected by stockholders who have held £500 of stock for six months previous to the election. A director is required to hold £2000, a deputy-governor £3000, a governor £4000, of the capital stock. At first the charter of the Bank was for only eleven years; but in consequence of the great services of the institution to government, its charter has been at various times renewed. The original stock of £1,200,000 has been augmented at different times, till in 1816 it reached £14,553,000 upon which the stockholders drew dividends. The profits of the Bank arise principally from traffic in bullion, discounting of bills, interest on mortgages, allowance for managing the public debt, &c.

The net profit of the Bank in 1852, out of which interest was paid on the capital stock, was £1,189,627. The interest paid to stockholders has wavered from 5 to 10 per cent. per annum, but has more generally been about 8 per cent. The Bank has besides, at different times, made dividends under the name of *bonuses*. A bonus is a sum of money derived from the division of a fund, which has been suffered to accumulate or remain for use, in case of an emergency. The emergency being past, the fund is divided. The bonuses of the Bank of England have varied during the current century from 10 to 5 per cent.

The Bank of England is situated in a central part of London, adjoining the Royal Exchange. It is an extensive structure with interior courts, the whole covering an area of about eight acres of ground. Within the limits of the Bank are conducted, on an extensive and perfect scale of art, the various processes of printing notes and other documents for the establishment; and in the fire-proof vaults beneath is the repository of bullion, or bars of gold and silver and coined money, constituting the substantial stock of capital for the time being. The number of clerks, porters, and other officials employed in the establishment was lately about 900.

The Bank of England trades not only on its paid-up capital, but on the capital confided to it in the form of deposits, and usually called its *liabilities*. This is perfectly legitimate, and consistent with the true principles of banking, it being only necessary to take care that the institution always leaves itself a sufficient fund from which to satisfy all demands. The issue of notes by the Bank is understood to be somewhat in accordance with the amount of its deposits; but this is necessarily dependent on various contingencies in public affairs. The leading feature in the character of the institution is the circumstance of its acting as the banking-house for the government. All the money drawn in the form of taxes or otherwise for the public service is consigned to the Bank, while all drafts for the public service are likewise made from it. In carrying on this branch of its business, the Bank allows the government to overdraw its account—that is, to take a loan of cash to a certain amount. The money so lent was some time ago upwards of £14,000,000, which parliament made a provision to reduce and finally pay off. The important services rendered to the government have in past times secured to the Bank most valuable privileges, amounting almost to a monopoly of the business in money. In 1797, when the Bank found itself unable to meet a run made upon it for gold for its notes, the government of that day summarily protected it from bankruptcy by issuing an order that Bank of England notes should be considered a legal tender; consequently the holders of notes at the time were, by force of law, refused their value in cash. This extraordinary state of affairs, with various modifications, lasted till 1821, when cash payments were resumed. Meanwhile the notes of the Bank, from not being representatives of specie, were

* Gilbert's History and Principles of Banking, pp. 128, 134.

considerably depreciated in nominal value; so great was the depreciation at one time, that four-pound notes would have been given in exchange for three guineas. It has been frequently represented as a serious hardship, that debts contracted during this prevalence of a depreciated currency have had to be paid in a currency of full value; for by this means the creditor receives perhaps a third more money than the actual value of the original sum owing. The Bank of England manages the business of the national debt at an office within its precincts; for which service to the state it is paid a per-centage, which at present amounts to upwards of £91,000 annually.

Joint-Stock Banks in England.—A parliamentary return was published early in 1840 relative to these establishments, from which it appeared that the number of joint-stocks in England, at 1st January 1840, was 108, a considerable proportion of which had been instituted within the preceding ten years.

The number of partners in these banks varies from 50 to 1200, and may average about 300. There are half-a-dozen with less than fifty partners, the smallest number being seven. Fifty-eight of the banks have branches, and fifty have none. The branches, including the parent bank, are from two to sixty-seven in number. There are eight banks, which have more than twenty branches. The whole number of parent banks and branches is upwards of 650.

There are, besides, about 500 *private banks* in England—that is, banks having not more than six partners. Adding these to the joint-stock banks and their branches, the whole number of banking establishments will probably exceed 1150.

The issues of the joint-stock banks, when contrasted with the magnitude of the establishments, seem to us exceedingly small. According to the last return (Jan. 8, 1846), the notes in circulation of all the joint-stock banks were in value £3,162,742. This, divided by the number of banks (100), gives an average circulation of only £31,627 for each; or if we include the branches, the average for each office or establishment is only £7000. Supposing the money to be employed in discounting at 5 per cent., the annual profit on £3,162,742 would be only £158,137, or no more than £1581 to each establishment. It is evident that their profits must be chiefly derived from deposits, which they can employ at 5 per cent., while we believe they give only 2.

The issues of the *private* banks, by the same return, were £4,505,821, which gives an average of about £9000 for each establishment. It appears that the joint-stock banks, so far from superseding the private banks, have had no perceptible effect, if indeed any effect at all, in narrowing their issues.

The chief advantage conferred on the Bank of England, and constituting its charter of monopoly, is the privilege of being the only bank in London, or within sixty-five miles of it, having more than six partners, which can issue notes payable to the bearer on demand. The Bank has also the privilege of its notes being a legal tender by other banks for any sum above £5, so long as it pays its notes in cash on demand. This provision is a security to all other banks against the effects of sudden runs upon them for gold. It is ordained by act of parliament, that 'upon one year's notice, given six months after the expiry of ten years from the 1st of August 1834, and upon repayment by parliament of all sums that may be due from the public to the Bank at the time of the expiration of such notice, the exclusive privileges of banking granted by this act shall cease and determine at the expiration of such year's notice.' In 1844–5 there was necessarily a renewal of the peculiar privileges of the Bank of England, by which they were prolonged to 1855.

Stocks—Stock Exchange.—There are various kinds of stocks. Shares in a joint-stock company are called stock, and so are shares of debts due by government. No note or document is given by the government to loan contractors or holders of stock, as an evidence of their claims. At an office under charge of the Bank of England, books are kept in which are inscribed the names of every creditor. The transfer of stock takes place on certain days, by the personal application of the holder, or his broker, having a power of attorney to act for him. In the transference, a seller may break down a large sum into many small sums equivalent in aggregate amount. If he hold £1000 of stock, he may cause the names of ten parties to be entered instead at £100 each. In these transfers no notice is taken of the market price of the stock; only the nominal amount, or stock at *par*, is recognised.

The ordinary sale of government stock is conducted in an apartment adjoining the Bank of England, called the Stock-Exchange, and the parties who manage all transactions of this kind are a body of stockbrokers. From the Stock-Exchange the public are rigorously excluded. No one is admitted except the subscribing brokers, who pay £10, 10s. per annum, and give securities to the extent of £800 against any deficiency in their transactions. The brokers are a respectable class of men, and seldom is any loss incurred on their account.

The market value of stock fluctuates according to the abundance or scarcity of money, and the likelihood of government paying back part of its borrowed money, or needing new loans. As the national debt can only be redeemed by buying up stock with any overplus revenue, any prospect of such being done by the apparently prosperous state of the finances causes the price of stock to rise; and if government were to announce that it was about to redeem a large portion of the debt, stocks would immediately rise to par. On some occasions, however, from the abundance of money, government has been in a position to announce, that unless the holders of certain stocks took a lower rate of interest, a new loan at a lower interest would be negotiated to pay off old debt. By this means alone several millions of interest per annum have been reduced, while the amount of debt remains much the same. Should it, on the contrary, appear that government is likely to borrow more money, from the prospect of a war, or some other untoward event, the price of stocks falls; and the price at one time fell as low as £57, 17s. 6d. per £100, when of course holders who were under the necessity of selling experienced prodigious losses.

In the buying and selling of stocks there is usually much deceit practised, which is known by the name of *stock-jobbing*. A writer in 'Blackwood's Magazine' for 1813 graphically notices this nefarious practice as follows:—'The practice of stock-jobbing consists in raising and circulating reports calculated to raise or depress the price of stock, according to the particular views of the individual. If he wishes, for example, to sell his stock or bills, he endeavours to propagate some report or other favourable to the issue of the war, and the establishment of peace, in order, if possible, to raise the price of stock; and if he wishes to buy, he propagates reports of a contrary tendency. It is painful to think that this abominable system is sometimes carried on by men whose rank and station in society, to say nothing of the obligation of morality and religion, might be expected to place them far above any such disgraceful acts; but in general, I believe, it is confined to men of desperate fortune and little character, who subsist by a species of gambling, to which the finance system of this country has opened a wide and extensive field. I allude to those men who make a practice of buying and selling stock, without actually possessing any, and whose transactions, therefore, are nothing more than wagers about the price of stock on a certain day. To explain the nature of the transaction by an example: I shall suppose that A sells to B a government bill of £100, or £100 of 5 per cent. stock, to be delivered on a certain future day, and that the price is fixed at £102. If, when the day arrives, the price of stock shall have fallen to £100, A would be able to purchase the bill in question for £100, while, in consequence of his bargain, B would be obliged to pay him £102 for it, so that A would gain £2. If, however, stock had risen to £104, B would still be obliged to give only £102, so that A

would lose £2; but instead of actually buying and selling the stock, the bargain is generally implemented by A paying to B, or receiving from him, the £2, or whatever may be the sum of loss or gain. In such a case as this, it is obviously A's interest that the price of stock should fall, and is obviously B's interest that it should rise, between the day of the bargain and that of settling; and hence the temptation held out to both to circulate reports favourable to their own particular views. B, or the buyer, is usually denominated a Bull, as expressive of his desire to *toss up;* and A, or seller, a Bear, from his wish to trample upon or *tread down.* The law of course does not recognise a transaction which proceeds on a principle of gambling; but a sense of honour, or, what is perhaps nearer the truth, *self-interest,* generally secures the payment of the difference, as the person who refuses to pay his loss is exhibited in the Stock-Exchange under the designation of a *lame duck,* a disgrace which is considered as the sentence of banishment from that scene of bustle and business.'

This last-mentioned stock, variously termed *public securities,* or the funds, requires to be explained.

It has been stated in the article CONSTITUTION AND RESOURCES OF THE BRITISH EMPIRE (No. 62), that since the revolution of 1688, government has been in the habit of borrowing money to supplement the revenue raised by taxation, chiefly for the purpose of carrying on wars; and that the amount of money so borrowed, at present (1849) amounts to about £800,000,000, which is called the National Debt. This vast debt comprises two species of debts—the funded and unfunded debt.

The *unfunded debt* usually amounts to no more than from £10,000,000 to £20,000,000 of the whole: it is only temporary, and consists of promissory-notes of £100, £200, £500, and £1000, issued by the Chancellor of the Exchequer: these notes, called *Exchequer Bills,* bear a certain rate of interest per day: the interest varies from 1½d. to 2½d. per £100 per day. These bills are exchangeable from hand to hand, and form a kind of currency convenient to hold as property. Bankers make considerable investments in Exchequer Bills. They are sold from one holder to another at a premium or discount, according to the state of the money market. Exchequer Bills are either paid off by the government at stipulated periods, or funded—that is, added to the permanent funded debt.

The funded debt consists of various denominations of stock, bearing different rates of interest, according to the terms on which the respective loans were contracted. The chief stocks are the 3 per cent. consolidated annuities; the 3 per cent. reduced annuities; and the 3½ per cent. annuities: the first-mentioned, which is ordinarily spoken of as the 3 per cent. consols, is the stock most in demand: it amounted in 1848 to £371,824,981. Whatever be the denomination of the stock, a description of one method of borrowing or funding will do for all. The Chancellor of the Exchequer receives power from parliament to borrow, for example, £10,000,000. This sum he divides into parts of £100 each; and he makes up his mind to pay a certain interest, say 3 per cent., for each £100. He now advertises for proposals to lend the gross sum required, these proposals to be sealed and sent to his office; all the proposals to be opened on a certain day: and the party who offers to give the largest sum in name of each £100 at the interest specified is to be accepted. The acceptor is called the 'contractor for the loan.' The sum usually offered in the name of each £100 varies in amount, according to abundance or scarcity of money at the time, the credit of the nation, and other circumstances. Between 1792 and 1802, when large sums were borrowed to carry on the war, the average sum given by contractors was £57, 17s. 6d. in name of each £100 which they lent. They gave £57, 17s. 6d., and got an obligation from government for £100. Latterly, as money has been more abundant, and the national credit improved, about £80 has been got for each £100 added to the national obligations. Whatever be the sum paid, the interest is reckoned on the nominal £100. The contractor who undertakes the loan pays down a certain portion, and is allowed some months to pay the remainder: during this interval he probably sells parcels of the stock at a profit, till the whole or a large portion is disposed of. Sometimes two or more contractors unite in these speculations. Suppose £75 is paid in name of £100 at 3 per cent., this would be equal to 4 per cent. if a whole £100 were given. The plan of funding debt by taking less than is inscribed in the national books is justly censured by all writers as absurd and vicious. For an obligation to the extent of £10,000,000, the government may get in actual money not more than £7,500,000; and thus the nation is encumbered with a debt which it never properly incurred. According to Mr Porter, in his work on the 'Progress of the Nation,' the national debt has been increased by £83,223,162 in consequence of this most reprehensible mode of negotiating loans. The practice originated in state necessities, and in the terms on which loans are contracted. It is a stipulation, or at least understanding, that the borrowers (the government) are not to be called on to pay back the loan. The money is sunk, as it were, for ever, at interest; and this arrangement may be considered to operate so far detrimentally, as to prevent lenders giving the sum of £100 for a claim to that amount, unless at an excessive interest. Such may be the excuse tendered for a practice which accommodates the existing generation at the expense of succeeding ages.

Banks in Scotland.—The earliest banking institution in North Britain was the Bank of Scotland, instituted by a charter of incorporation from the Scots parliament in 1695. The original capital was £1,200,000 Scots, or £100,000 sterling. The amount was raised by shares differing in extent, from £1000 Scots, or £83, 6s. 8d. sterling, to £20,000 Scots. In 1774, the amount of stock was extended to £200,000 sterling: now it is £1,000,000 sterling, and the shares £100 sterling.

The establishment of the Bank of Scotland was of great service to the nation; the landholders borrowing notes, and bringing the country into cultivation, and a spur being by that means given to various branches of manufactures. The Bank of Scotland continued to be the only bank in the country till the year 1727, when a new and similar establishment was constituted under the title of the Royal Bank of Scotland, whose advanced capital is now £2,000,000. These two establishments engrossed all the respectable banking business in the country till the year 1746, when another association was formed, and incorporated by royal charter, with the title of the British Linen Company. The object of this association was at first to encourage the linen manufacture of Scotland, but gradually it fell into the course of common banking business, and now occupies a high station among these institutions. From £100,000, the capital of this bank has been raised to £500,000, where it has long remained stationary. By adroit management, it carries on an immense deal of business, and possesses as high credit as any banking establishment in Scotland.

These are allowed to take precedence of others erected in the subsequent part of last, and in the present century, either in Edinburgh or in the provinces; and their shareholders enjoy the privilege of being responsible only for their individual stock.

All the banks, with few exceptions, are joint-stock associations, and are banks both of deposit and issue. Except the few private houses, all issue notes of one pound and upwards, which are payable on demand at the office whence they are issued. It was at one time ordained that Scottish bank-notes should not be reissued after they were three years old; but such a regulation is abrogated, and they are now sent out as long as they are in good condition. Almost all the modern notes are on specially-prepared paper, and are produced from plates of hardened steel, of such peculiar and intricate devices, that forgery cannot be attempted with success, or remain long undetected.

No periodical returns of their issues are made by the

Scottish banks. But on turning to the evidence given before the parliamentary committees of 1826, we find the usual value of the small notes in circulation estimated by Mr Paul of the Commercial Bank, and Mr Blair of the British Linen Company, at £1,800,000, which is increased by a third at particular seasons, and when trade is brisk. The committee estimate the paper money of all kinds in circulation in 1826 at £3,309,082. But in the year of great speculation, 1825, they estimate the highest amount of notes in circulation at £4,683,000, the lowest at £3,434,000. By the law of 1844 (subsequently noticed) the maximum authorised issue is £3,087,209.

The following is a return of the joint-stock banks existing in Scotland at 5th January 1839, with the dates of their establishment:—

The Bank of Scotland, Edinburgh, 1695; the Royal Bank of Scotland, Edinburgh, 1727; the British Linen Company, Edinburgh, 1746; the Commercial Bank of Scotland, Edinburgh, 1810; the National Bank of Scotland, Edinburgh, 1825; the Aberdeen Bank, Aberdeen, 1825; the Ayr Bank, Ayr, 1825; the Dundee Banking Company, Dundee, 1825; the Dundee Union Bank, Dundee, 1825; the Dundee New Bank, Dundee, 1825; the Glasgow Bank Company, Glasgow, 1825; the Greenock Bank, Greenock, 1825; the Leith Bank, Leith, 1825; the Paisley Bank, Paisley, 1825; the Perth Banking Company, Perth, 1825; the Renfrewshire Banking Company, Greenock, 1825; the Paisley Union Bank, Paisley, 1809; the Aberdeen Town and County Bank, Aberdeen, 1825; the Arbroath Bank, Arbroath, 1825; the Dundee Commercial Bank, Dundee, 1825; the Glasgow Union Banking Company, Glasgow, 1830; the Ayrshire Banking Company, Ayr, 1831; the Western Bank of Scotland, Glasgow, 1832; the Central Bank of Scotland, Perth, 1834; the North of Scotland Banking Company, Aberdeen, 1836; the Clydesdale Banking Company, Glasgow, 1837; the Southern Bank of Scotland, Dumfries, 1837; the Eastern Bank of Scotland, Dundee, 1838; Edinburgh and Leith Bank, Edinburgh, 1838; being twenty-nine in all. Of the above list, several have been dissolved, or united with others, so that the number of Banks in Scotland empowered to issue notes by the law of 1844 is now only nineteen.

The business done by the Scottish banking-houses is prodigiously increased by the institution of their branches in the provincial and country towns. From those banks already noticed, which are situated in Edinburgh, and from two or three of the chief provincial banks, there were altogether deputed, not long since, about 360 branches, and this number is undergoing a regular increase. These subsidiary establishments are to be found in every town of any note, from the Borders to the most northern point of Scotland. They are conducted by resident wealthy or responsible merchants and others, who give securities for intromissions, and are subjected to a very rigorous supervision by inspectors, who are continually travelling about for this purpose.

The prudent and enterprising manner in which the business of banking is conducted in Scotland, has often been the subject of remark and commendation. Several reasons may be assigned for the remarkable stability of the Scotch banks. Each bank, before gaining credit with its neighbours, must show that it possesses a sufficient paid-up capital, with a reserve fund in London, on which orders for balances may be given. It is also the custom of the banks to exchange the notes of each other once or twice a week, by which means the notes are sent very speedily back to the issuers, and thus an over-issue on the part of any single establishment is prevented. There can only be an over-issue by all the banks in the country becoming equally reckless—a thing not likely to occur to any serious extent. A third cause of the stability of the institutions, is the liability of shareholders for the debts of the establishment. Excepting in the case of the three old-established banks above specified, all the shareholders in the various banks are liable not only for the amount of their own shares, but for the shares of all the others; and the whole of their property may be seized to make up deficiencies. Although many of the shareholders are certainly not men of opulence, a number are so; and as their fortunes are good for the paper issued, the public runs no risk of injury. To strengthen this liability of shareholders, by the law of Scotland all heritable property, lands and houses, may be seized in satisfaction for their debts. As this is not the case in England, where personal or movable property can alone be taken by creditors, it would not be possible to establish banks in the south part of the island on the principle of the Scottish banks till the law touching heritable property underwent alteration.

Other causes, not of a legal nature, conspire to render the system of Scottish banking perfect. By reason of the circumscribed limits of Scotland, and the character of the people, a ramification of intelligence is created and preserved throughout the whole of society, altogether unknown in England, whereby the character, the wealthiness, and the conduct of the partners or directors of each bank, are made fully known to the rest. All seek, and all find, a knowledge of the management of each other. All are mutually on the watch; and symptoms of over-issues or other improprieties are spread with an amazing celerity, and have their immediate effect with the public.

In comparing Scottish banking institutions with those in England, and considering the different manner in which paper money has been employed by the two nations, the uniform security of the former appears almost miraculous. From the first issue of the bank-notes in 1704, till the year 1830, a single panic or general run did not occur in Scotland, although, during at least two-thirds of the intervening period, paper money had been used to the almost total exclusion of a gold currency. Partial and very temporary runs have assuredly been felt, from the effects of short-lived slander or mistaken notions, which have invariably been readily quashed; but in the course of a hundred and twenty-six years, there have only been two or three cases of banks failing to pay 20s. a pound (they paid 10s.), and four in which, after a short suspension of payments, all demands were liquidated. Their failure or stoppage, with the exceptions we mention, did not put the public to any loss; but this was to the injury of the shareholders, many of whom were reduced from affluence to poverty.

The peculiar character of Scottish banking was much infringed upon by an act of parliament passed in the year 1844, which limits the number of banks issuing notes to the number then existing; and obliges every bank of issue to keep a stock of sovereigns, according to a prescribed standard, which may be said to be at the rate of one sovereign for every two pound-notes issued. About a million of sovereigns thus lie locked up in the Scottish banks, for they are not seen in the circulation of Scotland. The loss of interest incurred by this arrangement amounts to about £50,000 annually. So serious a deduction from the profits of banking has had the effect of greatly limiting the extension of cash accounts and other accommodations. The number of the banks empowered to issue notes by this act is 19; their branches, 363; their capital, £11,240,000; and their authorised circulation, £3,088,209.

The common practice of making deposits of small sums in the banks, has further assisted in giving strength to the institutions. Each bank receives deposits of any sum above £10, for which a regular interest is given; and on this account the banks may be said to be the custodiers and traders upon all the spare capital of the country. Besides employing capital in discounting bills, lending money on heritable security, &c. Scottish banks grant loans of fluctuating amount, called *cash accounts*. By a cash account is signified a process, whereby an individual, on entering into an arrangement with a bank, is entitled to draw out sums as required, to a stipulated amount, and by an implied condition, to make deposits at his convenience towards the liquidation of the same.

Cash accounts are said to have originated from the following circumstance:—A shopkeeper in Edinburgh, in the year 1729, found himself at times in the possession of more than a sufficient supply of ready money to carry on his trade, the overplus of which he consigned to the care of the neighbouring bank. But on other occasions, by reason of the length of the credits given to his customers, his money became so scarce, that after exhausting his bank deposits, he still felt himself in difficulties. Several dilemmas of this kind having occurred, he was prompted to make a proposal of a novel nature to the bank—to the effect that, if it would accommodate him in straits with small loans, he would always shortly afterwards make up such debits, and that the parties should come to a balancing of accounts at periodical intervals. It seems this proposal was acceded to. A cash credit, or liberty to draw to a certain extent, was instituted under approved securities; and thus originated a system which has been of immense benefit to bankers and traders, and is now followed over the whole of Scotland.

Cash credits are guaranteed by two sufficient securities, or the applicants give infeftment to heritable property in caution of the contingent debt, and when any such debt is liquidated, the deed is cancelled. The expense of expeding a cash credit varies according to the amount of the desired loan. One for £500 may be stated at about £15. The deed requires no renewal. At the end of every six, and in some cases twelve months, calculations are made of entries and debits; the interest for and against the bank—the one being a per cent. higher than the other—is added and balanced, and an account being then rendered, the balance, if in favour of the bank, is either paid up, or remains against the debtor at interest to his new account. In these cash credits the borrower is always of course at the mercy of the bank, which can call upon him at any time to balance his account, or, by his failing to do so, have recourse upon his securities.

Since 1729, cash credits have increased to an amazing extent. In 1826, it was computed that there were TEN THOUSAND in Scotland, varying in amount from £100 to £5000 each, but averaging from £200 to £500. Though originally designed for mercantile persons, they are now operated upon by farmers, manufacturers, house-builders, miners, lawyers, and all classes of traders and shopkeepers. During the last twenty years, it is extremely probable that, instead of decreasing, they have increased a thousand or two more.

Irish Banks.—The Bank of Ireland was established in 1783, and the same restriction—we quote Mr M'Culloch—as to the number of partners in other banks that formerly prevailed in England was enacted in its favour. Owing to that and other causes, the bankruptcies of private banks have been more frequent in Ireland than in England. In 1821, this restriction was repealed, as respects all parts of the country more than fifty Irish miles from Dublin. Since that period several banking companies, with large bodies of partners, have been set on foot in different parts of the country: of these the Provincial Bank, founded on the Scotch model, is among the most flourishing. By the act of 1844, the circulation of the Irish banks empowered to issue notes was £6,354,494.

Banks are in the present day established in every civilised country. In the United States of North America they have been instituted to a great extent, and frequently on most unsound principles, their notes being for very small sums, and these in few instances negotiable without a loss at a comparatively short distance from the place of issue; often, also, there has been a universal stoppage of cash payments, in consequence of over-issues of paper money, a sure testimony that the country was trading beyond what its actual capital warranted. It is this liability to exceed legitimate bounds which throws discredit on a *paper currency* in contradistinction to one of gold and silver. Were bank-notes in all cases to be a representative of property impledged for their payment on demand, and could such property be instantaneously realisable, in the event of a run on the banks for payment, there would be little objection to their free issue. Except, however, in Scotland, where banking has been conducted on very cautious terms, notes have been on many occasions put in circulation representing nothing; and serious losses has been the consequence. Such is one of the great difficulties that beset the question of the CURRENCY.

Savings'-Banks.—These are banks for receiving and taking charge of small sums, the savings of industry, and have been instituted for the benefit of workmen and others, who may be able to spare a shilling and upwards from their weekly earnings. The first savings'-bank is understood to have been begun in Philadelphia in 1816, since which time they have been established in all parts of the United Kingdom, France, and other countries. Several acts of parliament were successively passed between 1817 and 1828 for the regulation of savings'-banks in England; and in the year last mentioned, the whole of these were consolidated in one statute (9 Geo. IV. chap. 92). This act, together with another passed in 1833, conferring additional and important privileges on savings'-banks (3 Will. IV. chap. 14), constitutes the existing law relative to these useful establishments; in 1835, the act was extended to Scotland. Savings'-banks established according to the provisions of these acts are entitled National Security Savings'-Banks, because the money deposited in them is paid into the Bank of England on account of government, whereby the nation becomes security for the amount of deposits—a security reckoned the best of all that could be given to depositers. The interest given by government on the sums so deposited is L.3, 5s. 0d. per cent. per annum, whatever may be the fluctuations in the value of the public funds during the term of investment. This rate of interest being higher than what government could otherwise borrow money for, it happens that the public are really losing money annually by their generosity. The rate of interest payable to the depositors is £2, 17s. 9½d.

Deposits of from one *shilling* to *thirty pounds* may be received by these banks; but no individual depositor is allowed to lodge more than thirty pounds in one year, or than £150 in whole. Charitable and provident institutions may lodge funds to the amount of £100 in a single year, or £300 in all; and Friendly Societies are permitted to deposit the whole of their funds, whatever may be their amount. Compound interest is given on the sums lodged, the interest being added to the principal at the end of each year in some banks, and at the end of each half-year in others, and interest afterwards allowed on the whole. Any depositor may receive, on demand, the money lodged by him, if it do not amount to a considerable sum; and even in that case it will be returned on a few days', or at most two or three weeks' notice. Practically, payment is always made on demand. The wisest and most effectual provisions are made for insuring the proper management of the affairs of the banks, so that those who intrust them with their money may place implicit reliance on its safety. Each depositor is provided with a small book, in which his deposits are entered, and the amount of his interest marked. On the 20th of November, the interest is added in the bank books whether the depositor call or not. It is computed for the full term, and upon every fifth fraction of a pound. Depositors have thus the advantage of having their principal sum gradually increasing at 3 per cent. compound interest. So successful has been the establishment of the savings' banks, that the amount of deposits, chiefly the property of the humbler classes, is now upwards of £32,000,000, and is annually increasing. In 1845, the number of individual depositors was considerably above 1,000,000. For further information respecting these beneficial institutions, the reader is referred to a subsequent number on the SOCIAL ECONOMICS OF THE INDUSTRIOUS ORDERS.

POPULATION—POOR-LAWS—LIFE-ASSURANCE.

POPULATION.

The rate at which human beings naturally increase, the proportion which this increase bears to the means which exist for their subsistence, and the laws which operate to bring the increase and the means of subsistence into conformity, were subjects scarcely reflected on by our ancestors, but have been matter of keen discussion and controversy during the first thirty years of the present century.

As far as population was at all thought of in former times, the prevalent doctrine was, that the greater the numbers of a nation, the stronger was the state, and the more likely was that country to be a scene of both agricultural and commercial industry. So useful were numbers considered for increasing the means of subsistence, and also of national defence, that in many countries it was thought proper to make laws for encouraging matrimony, and to put bounties on all families exceeding a certain number. So lately as the time of Louis XIV., pensions were awarded in France to individuals who had ten or more children.

Dr Adam Smith, in his 'Wealth of Nations,' was perhaps the first to suggest anything like a law as regulating the increase of population. He remarked that 'the demand for men, like that for any other commodity, necessarily regulates the production of men; quickens it when it goes on too slowly, and stops it when it advances too fast. It is this demand,' says he, 'which regulates and determines the state of population in all the different countries of the world—in North America, in Europe, and in China; which renders it rapidly progressive in the first, slow and gradual in the second, and altogether stationary in the last.'

VIEWS OF MR MALTHUS.

The preceding hint, for it can be regarded as little else, is said to have been what suggested the celebrated essay of Mr Malthus, which first appeared in 1798, but was almost reconstructed in a second edition in 1803. There was something so startling in the views of this writer, and at the same time so much plausibility in his arguments, distressing as they were to natural feelings, that his work attracted general attention, and many of the ablest thinkers and writers of the day became converts to its main doctrines.

An abridgment of Mr Malthus's views, given in the 'Edinburgh Review' for August 1810, sets out by showing that 'the rate of population is by no means the same in all parts of the world.' The variations in the rate are universally preceded and accompanied by variations in the means of maintaining labourers. 'Where these funds are rapidly increasing, as in North America, the demand for an increasing number of labourers makes it easy to provide an ample subsistence for each; and the population of the country is observed to make rapid advances. When these funds increase only at a moderate rate, as in most of the countries of Europe, then the demand for labourers is moderate; the command of the labourer over the means of subsistence is consequently much diminished; and the population is observed to proceed at a moderate pace, varying in each country, as nearly as may be, according to the variations in the funds for its support. Where these funds are stationary, as we are taught to believe is the case in China, and as has certainly been the case in Spain, Italy, and probably most of the countries of Europe during certain periods of their history, there the demand for labour being stationary, the command of the labourer over the means of subsistence is comparatively very scanty, and population is observed to make no perceptible progress, and sometimes to be even diminished.

In the second place, it is a fact equally notorious, that the actual increase of the funds for the maintenance of labour does not depend upon the mere physical capacity of any particular country to produce food and other necessaries, but upon the degree of settled industry, intelligence, and activity, with which these powers are at any particular time called forth. We observe countries possessing every requisite for producing the necessaries and conveniences of life in abundance, sunk in a state of ignorance, indolence, and apathy, from the vices of their governments, or the unfortunate constitution of their society, and slumbering on for ages with scarcely any increase in the means of subsistence, till some fortunate event introduces a better order of things; and then the industry of the nation being roused and permitted to exert itself with more freedom, more abundant funds for the maintenance of labour are immediately provided, and population is observed to make a sudden start forwards, at a rate altogether different from that at which it had previously proceeded.

This seems to have been the case with many of the countries of Europe during some periods of their history; but is more particularly remarkable in Russia, the population of which, though very early inhabited, was so extremely low before the beginning of the last century, and has proceeded with such rapid steps since, particularly since the reign of Catherine II.

It is also a fact that has often attracted observation in a review of the history of different nations, that the waste of people occasioned by the great plagues, famines, and other devastations to which the human race has been occasionally subject, has been repaired in a much shorter time than it would have been if the population, after these devastations, had only proceeded at the same rate as before. From which it is apparent, that after the void thus occasioned, it must have increased much faster than usual; and the greater abundance of the funds for the maintenance of labour, which would be left to the survivors under such circumstances, indicates again the usual conjunction of a rapid increase of population with a rapid increase of the funds for its maintenance. In England, just after the great pestilence in the time of Edward III., a day's labour would purchase a bushel of wheat; while, immediately before, it would hardly have purchased a peck.

With regard to the minor variations in the different countries of Europe, it is an old and familiar observation, that wherever any new channels of industry and new sources of wealth are opened, so as to provide the means of supporting an additional number of labourers, there, almost immediately, a stimulus is given to the population; and it proceeds for a time with a vigour and celerity proportionate to the greatness and duration of the funds on which alone it can subsist.'

From these and other premises, Mr Malthus laid it down as a proved fact, that population tends to increase at the rate of a doubling every twenty-five years. He at the same time endeavoured to show that, as man begins to use the best lands first, or in other words, those of which he can reap the fruits with least labour, and then has to go to worse and worse, it becomes always more and more difficult to obtain the means of subsistence for increasing numbers. He concluded that, at the utmost, the means of subsistence would be found, at the end of each successive quarter of a century, to have increased only at the rate of double for the first, triple for the second, quadruple for the third, and so on. Thus (said he) while population would go on increasing in a geometrical ratio—that is, as 1, 2, 4, 8, 16, 32, 64, 128, &c.—food would increase only in an arithmetical ratio—that is, as 1, 2, 3, 4, 5, 6, 7, 8, &c.—and the consequence

of an unchecked increase of the one, with the utmost possible increase of the other, would be, that when the population of the globe had advanced to 500,000 millions, there would be food for 10,000 millions only, or but a fiftieth part of the number!

Considering, then, that there is a power and a tendency in human beings to increase so rapidly, and that, in point of fact, it is only in a few favoured spots that they do increase at such a rate, Mr Malthus concluded that there must be some counteracting agencies, or *checks*, in constant operation, in almost all communities, to restrain population at a lower rate of increase, or keep it stationary. In looking about to discover these checks, he satisfied himself that they were of two orders: first, there was the mortality produced by the effects of deficient food and of wicked passions; these he called *positive checks*: then there was the check produced by a prudent forethought in human beings, leading them to avoid marriage, on account of the little prospect of being able to rear a family in comfort; this he called the *preventive check*.

Arriving at this point, Mr Malthus and his followers proceeded to show how their doctrines were applicable for the benefit of communities. It was held that there could be no choice between the two kinds of checks: it was clearly preferable that population should be restrained by the preventive check. 'It is observed,' says the Review already quoted, 'in most countries, that in years of scarcity and dearness the marriages are fewer than usual: and if, under all the great variations to which the increase of the means of subsistence is necessarily exposed from a variety of causes—from a plenty or scarcity of land, from a good or a bad government, from the general prevalence of intelligence and industry or of ignorance and indolence, from the opening of new channels of commerce or the closing of old ones, &c. &c.—the population were proportioned to the actual means of subsistence, more by the prudence of the labouring classes in delaying marriage, than by the misery which produces premature mortality among their children, it can hardly be doubted that the happiness of the mass of mankind would be decidedly improved.

It is further certain, that, under a given increase of the funds for the maintenance of labour, it is physically impossible to give to each labourer a larger share of these funds, or materially to improve his condition, without some increase of the preventive check; and consequently that all efforts to improve the condition of the poor, that have no tendency to produce a more favourable proportion between the means of subsistence and the population which is to consume them, can only be partial or temporary, and however plausibly humane, must ultimately defeat their own object.

It follows, therefore, as a natural and necessary conclusion, that in order to improve the condition of the lower classes of society, to make them suffer less under any diminution of the funds for the maintenance of labour, and enjoy more under any actual state of these funds, it should be the great business to discourage helpless and improvident habits, and to raise them as much as possible to the condition of beings who "look before and after." The causes which principally tend to foster helpless, indolent, and improvident habits among the lower classes of society, seem to be despotism and ignorance, and every plan of conduct towards them which increases their dependence and weakens the motives to personal exertion. The causes, again, which principally tend to promote habits of industry and prudence, seem to be good government and good education, and every circumstance which tends to increase their independence and respectability. Wherever the registers of a country, under no particular disadvantages of situation, indicate a great mortality, and the general prevalence of the check arising from disease and death over the check arising from prudential habits, there we almost invariably find the people debased by oppression and sunk in ignorance and indolence. Wherever, on the contrary, in a country without peculiar advantages of situation, or peculiar capability of increase, the registers indicate a comparatively small mortality, and the prevalence of the check from prudential habits above that from premature mortality, there we as constantly find security of property established, and some degree of intelligence and knowledge, with a taste for cleanliness and domestic comforts, pretty generally diffused.

Nor does experience seem to justify the fears of those who think that one vice at least will increase in proportion to the increase of the preventive check to population. Norway, Switzerland, England, and Scotland, which are most distinguished for the smallness of their mortality, and the operation of the prudential restraint on marriage, may be compared to advantage with other countries, not only with regard to the general moral worth and respectability of their inhabitants, but with regard to the virtues which relate to the intercourse of the sexes. We cannot,' as Mr Malthus justly observes, 'estimate with tolerable accuracy the degree in which chastity in the single state prevails: our general conclusions must be founded on general results; and these are clearly in our favour.

We appear, therefore, to be all along borne out by experience and observation, both in our premises and conclusions. From what we see and know, indeed, we cannot rationally expect that the passions of man will ever be so completely subjected to his reason, as to enable him to avoid all the moral and physical evils which depend upon his own conduct. But this is merely saying that perfect virtue is not to be expected on earth, an assertion by no means new, or peculiarly applicable to the present discussion. The differences observable in different nations, in the pressure of the evils resulting from the tendency of the human race to increase faster than the means of subsistence, entitle us fairly to conclude, that those which are in the best state are still susceptible of considerable improvement, and that the worst may at least be made equal to the best. This is surely sufficient both to animate and to direct our exertions in the cause of human happiness; and the direction which our efforts will receive, from thus turning our attention to the laws that relate to the increase and decrease of mankind, and seeing their effects exemplified in the state of the different nations around us, will not be into any new and suspicious path, but into the plain beaten track of morality. It will be our duty to exert ourselves to procure the establishment of just and equal laws, which protect and give respectability to the lowest subject, and secure to each member of the community the fruits of his industry; to extend the benefits of education as widely as possible, that to the long list of errors from passion, may not be added the still longer list of errors from ignorance; and, in general, to discourage indolence, improvidence, and a blind indulgence of appetite without regard to consequences; and to encourage industry, prudence, and the subjection of the passions to the dictates of reason. The only change, if change it can be called, which the study of the laws of population can make in our duties, is, that it will lead us to apply, more steadily than we have hitherto done, the great rules of morality to the case of marriage, and the direction of our charity; but the rules themselves, and the foundations on which they rest, of course remain exactly where they were before.'

This must be considered as the mildest possible exposition of the application of Mr Malthus's doctrines: his theory almost necessarily led to some other practical inferences, of a kind to which it is not so easy for a humane mind to assent. It came to be held, for instance, that where the preventive check had not operated, it was quite legitimate to allow the positive to come into operation. A human being, who had come into existence undemanded by the state of the funds for subsistence, was to be told that the places at Nature's table were all occupied, and there was no cover for him. To the man who married when there was a redundancy of population, 'all parish assistance,' said Mr Malthus, 'should be most rigidly denied; and if the hand of

private charity be stretched forth in his relief, the interests of humanity imperiously require that it should be administered very sparingly.' These notions were adopted very generally by a class of political economists, and for twenty years they were in vogue in England, where the notorious abuses of the old poor-law had prepared the minds of many for taking extreme views with regard to public charity. But it was impossible for the great bulk of the community to give a cordial reception to doctrines so violently in opposition to the dictates of the natural feelings.

OBJECTIONS TO MR MALTHUS'S VIEWS.

A reaction at length took place against the Malthusian theory, and views having an opposite tendency were presented by various writers, the most distinguished of whom was Mr M. T. Sadler, whose work, entitled 'The Law of Population,' appeared in 1830.

By these writers it was represented that in America and the Australian colonies there was an evident tendency in subsistence to increase in a more rapid ratio than population, insomuch that flocks and herds became a drug, and it was not uncommon in Brazil to use fat carcasses of mutton as fuel in limekilns. The only difficulty experienced in those regions was in obtaining a market for the vast amount of produce not needed by the native population. Here, it was said, is a clear case in disproof of the proposition, that population always tends to increase more rapidly than food.

As for the geometric ratio of the human increase, by which so great an alarm had been excited, what was it, after all, but a different form of the obvious truth, that the more people there were, there would be the more parents, and consequently the more children? Suppose ten families, existing in 1800, having become twenty in 1825, it might certainly be expected that the addition between the last date and 1850 would be other twenty, not ten merely, seeing that the start was not from ten, as it had been before, but from twenty. Such is but an unavoidable consequence of population swelling by multiplication, and not by addition. But if the human family follows this ratio of increase, so do all the orders of organic beings, animal and vegetable; sheep, oxen, and hogs increase at the geometric ratio as well as mankind, and what is more, they begin to multiply at a much earlier period of life. Poultry, for instance, could probably multiply themselves a million of times before a couple of the human race could do so once. The vegetable food of man is capable of a still more rapid increase. Wheat generally returns from ten to twenty fold in one year. The produce of a single acre of this grain, increased year after year in the ordinary way, would require only fourteen years to reach an amount which would occupy the whole cultivable surface of the globe. And as it is with wheat, so is it with most of the other plants on which we depend for food, either for ourselves or for the animals which become food to us. So that, instead of there being any such disagreement between the natural possibilities of increase in human beings and subsistence, as Mr Malthus and his disciples insisted on, there would appear to be a discrepancy in exactly the contrary way; that is to say, the means of subsistence appear to be capable of a much more rapid increase than human beings.

But—the Malthusians object—when the best soils are all under cultivation, it is necessary to resort to the inferior. These require more labour and afford less return. There is therefore a *decreasing fertility* in the country, while its population is always increasing. To this it is replied by the opposite party, that while worse and worse soils are in the course of being resorted to, better and better modes of culture are coming into operation, so as to make perhaps a third-rate soil capable of producing as much, by a certain amount of labour, as a second-rate soil was a few years before, and so on with the other qualities, each being raised a degree in the scale by every fresh effort of human ingenuity. In point of fact, the best British soils do now bear four times the quantity of grain which they did a few centuries ago, and millions of acres then deemed unfit for tillage now produce as much by the same degree of labour as the best soils did at that time. Add to this improved modes of culture, which lessen the amount of labour, the application of stimulants hitherto unknown, and also more economical modes of sowing and preparing food, and you have a ratio of increase in the means of subsistence equivalent to anything anticipated in the progress of population.

The Malthusians, however, were said by their opponents to derive the strength of their case from limiting their views to a certain region. Their propositions, it was admitted, might be true with regard to a population shut up in a certain small space, without any connection with what was beyond. But such a population never existed, and therefore the apprehended evils never could take place. From the earliest notices we have of the human family, it appears to have been their custom to spread abroad over the soil, when they found that food could be more easily obtained at a distance from the natal spot than at the natal spot itself. The original command given to man, *to increase and multiply and replenish the earth*, is only in accordance with what has always appeared as a tendency of the race. It is probable that at the present time not above one-hundredth part of the earth's surface is cultivated, and not one-hundredth part of that cultivated in a scientific or advantageous manner; while, from what has taken place, we may reasonably calculate upon the productiveness of the best-cultivated parts being yet greatly increased. With such an almost indefinite field still before us, it seems absurd to be under any anxiety as to the supposed tendency of the human family to a too rapid increase. The superabundance of one district has only to go to some yet unpeopled spot, or to exert ingenuity and industry to raise more food from that which they do occupy, in order to maintain themselves in comfort. There is another means whereby it may chance that a superabundant population can support itself in the native locality, though the productiveness of that locality falls short of the demand for food. If it possess advantages for manufactures, it can exert its industry in that way, and exchange the products for food raised in other countries, where subsistence exceeds population, and advantages for manufactures do not exist.

The opponents of Mr Malthus combated his notion of checks on moral and religious grounds; and here, certainly, the natural feelings of mankind greatly favoured their views. It was held as an impeachment of that system of wisdom and benevolence seen throughout all nature, that one of the most powerful tendencies of human beings should be supposed to require being put under an absolute arrestment, upon the penalty of its otherwise leading to misery in the individual, and embarrassment in the community. It was held that the preventive check, supposing it to be capable of operating without an increase of immorality, was necessarily attended by an abridgment of human happiness, in as far as it involved a denial and repression of the domestic affections. Its cruelty was also partial, for it bore solely on the poorer classes, to whom celibacy is a greater hardship than to the rich. And even supposing that it could be morally carried into effect, so as to keep down population at a certain level, it was, after all, an uncalled-for interference with Divine arrangements, which, from all analogy, as well as from their practical effect, might be supposed as having been designed for good ends. For do we not see that the charge of a family acts in all well-constituted minds as an incentive to industry? and can we doubt that equally will a growing population tend, in ordinary circumstances, to increase the industry of a nation? Contemplated thus, the tendency to increase would appear as a means, in Providence, to stimulate men and nations to the utmost possible exertions for the improvement of the materials placed at their command, so that no faculty of their being might lie waste, and no power of physical nature remain useless and unemployed. Sup-

posing this to be one of the final causes of the population principle, the preventive check of the Malthusians must necessarily appear as an impious attempt to control one of the Creator's most important designs.

GENERAL OBSERVATIONS.

Such is an outline of the arguments which have been advanced on both sides of this important question. It must, we think, be generally evident to new and dispassionate inquirers, that there is some truth in the views of both parties, but that the full and exact truth has not been stated by either. For arriving at a sound conclusion on the subject of population, the means do not perhaps exist in the present imperfect state of statistical science; but in the meantime we may present a few considerations which have occurred to ourselves.

It appears to us to be only an assumption that there is everywhere a tendency to double the population every twenty-five years. We certainly see that such has been the case in North America; but possibly this is considerably owing to temptations which are presented by the state of the country, labour being so expensive in all such regions, that a bounty may be said to be put upon the possession of a numerous family. Perhaps the natural tendency is there drawn into something approaching to an unnatural state of activity.

Allowing that the increase is no more than what the natural inclinations of that people dictate, it is by no means clear that all nations possess natural inclinations in the same degree. We know that many features of human character are manifested in very different degrees in different nations; and it is therefore not unreasonable to suppose that there are also national differences in those feelings which lead to the increase of the human family. Individuals, it is well known, are characterised very differently in this respect. There are also obvious differences in families, the peculiarity being apparently hereditary. Why, then, may there not be differences also in nations? Perhaps the light to be derived from the history of families and of individuals, has not yet been taken sufficient advantage of for the illustration of this question. A careful collection of facts would probably show a far greater amount of natural causes for the obstruction of population, and these altogether independent of Mr Malthus's checks, than philosophers are at all prepared for.

The history of many families of historical note incontestably shows that often, with all external advantages, there is surprisingly little tendency to increase. The extinct peerage and baronetage of England forms, it will be recollected, a pretty large book. In that high rank there is greater longevity, and consequently, it may be presumed, better health, than in lower grades; yet the line often fails for lack of heirs. To take a few cases which happen to be familiar to us: When George, fifth Duke of Gordon, died a few years ago, it was necessary, in order to get an heir for one of his titles destined to heirs-male, to go back to the ancestor who had flourished in the time of the civil war, all the intermediate persons having failed to send down male heirs, though many had had several sons born to them. When the main line of the Keith Mareschal family became extinct in 1778, it was necessary to go back for a male representative to a collateral line which sprung off from the main one at the end of the fifteenth century, although many goodly representatives and male cadets had flourished in the interval. It is well known that no representative of the royal family of Stuart since Robert III., who died in 1406, has at this time legitimate male descendants. In short, it would appear that families may exist in flourishing circumstances for hundreds of years, and after all, the male progeny may become extinct, and the name of the race be in time looked for in vain. The contrary is, no doubt, often true: for example, the male progeny of the above-mentioned Scottish king exist in great numbers, in all conditions of life. But while it is the lot of some to be thus multiplied exceedingly, it is not less true that many individuals leave not one copy of themselves; and that even whole clans and tribes, numerous at one time, will ultimately shrink, like an exhaled river, and disappear from the land, and all this notwithstanding every sufficiency of the means necessary to a comfortable existence.

An illustration occurs to us, to which, we believe, many of our readers will readily find parallels within their own knowledge. A citizen of Edinburgh, who died about thirty years ago, had seventeen sons and daughters, most of whom reached maturity. All the members of this second generation have ever since been in comfortable circumstances: some are now dead; the rest have passed on to such periods of life that it is not to be expected that children will hereafter be born to any of them. And what is the number of the third generation of this family? Only *eight*, the offspring of two marriages. Thus showing that the progeny of a single pair may look large at the first remove, but shrink at the second. We may add, that this family appears decidedly marked by much less than the average of a tendency to matrimonial life. As facts are what is here wanted, the writer may be excused for mentioning a circumstance in his own family history. He can trace its course with tolerable clearness for two hundred years; and is pretty well assured that, during the whole of that time, till the generation immediately preceding himself, no representative of the family had more than one son to transmit its name and property. Local antiquaries are familiar with instances of families once numerous in a certain province, but now extinct. The present writer has reason to believe that his own family existed for more than twice the space of time above-mentioned in one particular place; yet the county in which that place is situated does not now contain one person of the name.

Were it even admitted that communities are naturally equal in respect of the inclination and power, it still remains to be shown that these tend to be equally manifested in all social circumstances. The readiness with which the Malthusians have assumed that this is the case, seems to us highly unphilosophical.

In dense communities, where all social circumstances are in the best condition, there are many enjoyments not known in ruder states of society. It may not merely be that these enjoyments compensate for the want of others, but they may absolutely take away or supplant the inclination for those other enjoyments, so as to make the 'checks,' as far as they are concerned, a mere empty name. Following out this line of argument, supposing it to be sound, we arrive at the conclusion, that when a country becomes filled up with people, it is also in general attended with circumstances which moderate the tendency to increase, without that being felt as any hardship.

The noted case of Ireland tends to support this hypothesis. Singularly deficient in the compensatory or rather preclusive conditions, this country has long been remarkable for the rapid increase of its population. The common people, reduced to a degree of poverty which admits of no hope, and exposed to a constant privation of all the ordinary solaces of life, are driven to matrimony as the only comfort in their power, just as others in their condition are driven to the use of intoxicating liquors. The consequences lead to greater poverty, and greater poverty tends to increase the evil; and thus will such a system of things go on, until counteracting agencies are brought into operation. Such agencies are now apparently at work in Ireland; and however painful and distressing the ordeal, wealth and its enjoyments will ultimately increase according to the capabilities of the country and the amount of industry expended upon their development. Even under the obstruction of recent visitations and difficulties, circumstances are improving, and we may therefore hope speedily to see the advance of population in that country less of a wonder than it has been.

Granting the above arguments to be sound, it follows that the stationary condition of the population of old countries is not necessarily to be supposed to be attended with either the hardship of restraint or an extraordi-

nary mortality. If the wealth and ordinary solacements of a people in such circumstances are not in the way of being lessened, that people may fairly be presumed to be as well off in all necessary respects as the rapidly-increasing multitudes of America.

Where we see the inhabitants of an old country rapidly increasing, we must come to one of two conclusions: either that that country is in a flourishing state, so that there is a kind of bounty put upon children, or that it is in a state of such wretchedness, that the intercourse of the sexes is the only attainable enjoyment. With regard to Ireland, we presume there can be no doubt of its liability to pass into the latter category. But the rapid increase of the English people in the last forty years will probably be the subject of a doubt. To determine this question, it might be inquired if the increase of the agricultural products and of the manufacturing industry of the country has been in an equal ratio, and if labouring men, skilled and unskilled, can now obtain for their labour as large a share of the comforts of life as formerly. Notwithstanding popular declamations to the contrary, we suspect this to be the case, and consequently believe the increase of population in England to be, upon the whole, of a healthy and satisfactory description.

POOR-LAWS.

In all stages of society there has existed a class emphatically termed the *Poor*, composed of persons who, but for the charity of their neighbours, would be nearly or totally destitute, being themselves unable, or all but unable, to supply their own wants. It is easy to see how this has been and must be; for, from accidents in the operation of the natural laws presiding over the birth of individuals, some come into the world without the usual gifts of body and mind required for obtaining a sufficient subsistence; the accidents of life deprive others of the use of their full powers; many reach an infirm old age without having laid up a store to help them over it; the consequences of vice and error—of all those countless temptations which beset human nature, and from which no one is altogether safe—leave many in a helpless state; finally, in the imperfection of all political institutions, there are circumstances which press severely upon classes and persons, tending to make their own efforts for their subsistence insufficient. The operation of accidents upon one class of parents, and the vices and neglect of others, likewise leave many young and helpless children in a state in which they would be destitute but for the aid of neighbours. All of these causes being inherent in human nature and in society, we may be assured that 'the poor we shall have with us always,' however it may be possible, by judicious and humane efforts, to keep their numbers within comparatively moderate bounds.

In an early state of society, the relief of the poor is left to the operation of benevolence amongst individuals; and the destitute are either succoured by those locally near them, or go forth to beg relief in a wider circle. Generally, the efficacy of benevolence for this end is made the greater, in consequence of the succour of the poor being set forth as a duty in almost all religions. In addition to occasional and particular acts of charity, donations are made and legacies left for the purpose of affording a more or less regular and systematic relief within certain bounds. As society, however, advances, it is found that the charity of individuals is either an insufficient means of succouring the poor, or is attended with certain inconveniences. The classes of society becoming more detached from each other, cases of destitution make appeal, almost exclusively, to the parties nearest in poverty; while the rich, and the comparatively rich, are saved from all concern in the matter, merely because local and social circumstances spare them a personal connection with it. A relief by benevolence is found to be oppressive to those who have kind feelings, while the niggardly and ungenerous escape. A dense and highly-artificial state of society rendering it impossible to keep watch over particular cases of destitution, the relief afforded is unavoidably partial and unequal—no one knowing the real needs of a petitioner, or how far he is relieved by others; so that a door is opened for the practice of gross imposture, while the more modest poor are probably the least liberally treated. It is also generally found that this state of society is attended with an increase of the numbers of the poor, rendering individual efforts insufficient, and tending to such disorders, that a public provision becomes necessary as a matter of police. A new principle is then evolved from the natural fact of the existence of a poor class—namely, that the community cannot be safe from imposture, spoliation, the propagation of disease, and other kindred evils, unless it combine to assure itself that no person in the country shall want the necessaries of life.

It is then that states begin to make arrangements for the regular relief of the poor; and generally these arrangements are of a more or less advanced and efficient nature, in proportion to the advanced social condition of the respective countries. In most of the Catholic states of Europe the system adopted consists simply in the ministers of religion taking charge of the voluntary contributions of the people, and administering them to the best of their ability. In Portugal, Sardinia, Venice, France, Belgium, and some other countries, the same system exists, excepting only that the ministers of religion are superseded in their charge by officers appointed by the state. We need scarcely remark that the single fact of the funds being voluntary, renders it impossible, as to any of these countries, to be certain that the provision for the poor is sufficient in amount. In England, Ireland, Prussia, Bavaria, Wurtemberg, Mecklenberg, Berne, Russia, Denmark, Sweden, and Norway, the principle is recognised that a compulsory provision ought to be made to insure that all the members of the community shall have the means of subsistence. In England, this has been in operation for nearly three centuries; but in most of the other countries enumerated it is of comparatively recent adoption. In America, all the states of the Union which are of English origin have, from their commencement as colonies, adopted this principle. In Scotland, laws for a compulsory provision have existed nearly as long as in England, but have not, till very recently (1845–46), been carried out into anything like a general system.

ARRANGEMENTS FOR THE POOR IN ENGLAND.

Acts respecting the poor in England only made arrangements as to the places in which they should beg, until, in 1536, immediately after the dissolution of the religious houses, by which the poor had previously been in a great measure supported, it was found necessary to make an effort to repress the enormous prevalence of vagrancy, by enacting that head officers in parishes, towns, and counties, should take charge of the impotent poor, and collect alms for their support, and at the same time use force to compel able-bodied mendicants to work for their own livelihood. This and subsequent acts of a similar character appear in a great measure to have failed in their object, chiefly perhaps from the severity of the penalties imposed for disobedience. In 1572, we find the first trace of compulsory assessment for the poor—a measure then resorted to, apparently, because all other means of collecting money had proved insufficient.

It was, however, by the famous act 43 Elizabeth, c. 2 (1601), that the basis of the present system of poor-relief in England was laid. The professed objects of this law were, 'to set the poor to work, to relieve the lame, impotent, old, and blind, and to put out their children as apprentices.' To attain these objects, the inhabitants of every parish in the country were required to raise a fund sufficient to maintain their own poor; and the administration of this fund was placed in the hands of parish overseers, under the control of

justices of the peace. The leading merit of this act was, its requiring that the claims of the able-bodied for relief should be subjected to a *test*, to prove that the alleged want was not the result of an indolent disposition; *such persons were to receive relief only on condition that they should work for it.* To make this rule certain of operation, an act passed eight years after (7 Jac. I. c. 4) ordered the building of *houses of correction*, to be provided with cards, mills, and other implements, and where the vagrant able-bodied poor should be set to work. This may be considered as the origin of the workhouse system in England.

It is clear, from the statutes of this period, that the chief evil which the legislature found itself called upon to consider and provide for, was the indolent and vagrant disposition of a large section of the people. It was not, as now, that many men occasionally find a difficulty in getting work, but that many were unwilling to work, preferring to wander about the country in idleness. It appears that these vagrants were accustomed to stay only for a short period in one place, and to flit about to wherever they thought they would be best supported; nor can it be doubted that, in lonely places, they would not be backward to use means for terrifying the lieges into contributions for their benefit. That, in such circumstances, these people would want all moral culture, and be a source of danger to the community, is of course evident. It required many years' operation of the law to reduce this evil; but at length, about the end of the seventeenth century, it seems to have been considerably lessened. The same class of persons then began to prefer the benefits to be obtained through the claim which the law gave them upon their native parishes, and the evil of vagrancy was gradually exchanged for one of another but less grievous kind—an inclination to a timid and slothful dependence on the relief to be obtained at one fixed place.

The houses of correction were mainly penal establishments; and it was not till 1723 that workhouses, as now understood, were established. An act passed in that year enabled parishes, either singly or in union, to provide themselves with houses wherein to employ the poor; and enacted that, in case any person refused to be relieved in those houses, he should not be entitled to any other relief. This might be severe upon the real pauper, but it effectually unmasked the voluntary one and the impostor, and proved a protection to parishes against the orders of justices, over-liberal of money not their own. The operation of this law was so favourable to the public, that some began to imagine that paupers might even become profitable; and this was partly the cause of an act (22 Geo. III. c. 83) in 1782, usually called *Gilbert's Act*, which threw upon guardians the duty of finding work for the poor near their own residences, and making up what was required for their subsistence out of the poor-rates. The use of the workhouse as a test of real indigence and inability was thus in a great measure undone, and all its benefits in repressing a pauper population lost. Gilbert's Act may be said to have been the foundation of all the pecuniary oppression to the public, and all that demoralisation of the lower classes for which the English poor-laws were latterly so remarkable.

In 1795, the price of wheat, which, at an average of the three preceding years, was 54s., rose to 74s., and the condition of the labouring-classes consequently became one of considerable privation and hardship. Instead of temporary measures for getting over a temporary difficulty, one of a permanent nature was adopted. The magistrates of Berkshire in that year issued tables, stating what the wages of a labourer per week ought to be, according to the magnitude of his family and the price of the gallon loaf; directing at the same time the overseers, and others concerned in the management of the poor, to regulate their allowances accordingly. The minimum weekly wages of an unmarried labourer, supposing the gallon loaf to sell at one shilling, were set down at 3s.; when married, and having one child, wages were to be at least 6s.; if he had five children, they were to be at least 12s.; if he had seven children, they were to be 15s. In the event of the price of the gallon loaf rising to 1s. 6d., the wages of an unmarried man were not to be less than 4s. 3d. a week; while the wages of a married man, with a single child, were not to be less than 8s. 3d.; and those of a married man with seven children not less than 20s. 3d. These regulations, which remind one of the ignorant legislation of the fourteenth century, were made binding, universal, and permanent, by an act passed in the ensuing year (36 Geo. III. c. 23). It cannot fail to be remarked what a mean opinion of the character of the labouring-classes of England must have been entertained amongst the more enlightened men of that day, when it was thus thought necessary to undertake for them some of the simplest duties which they owed to themselves, and to make them everywhere pensionaries upon the public for a considerable part of their subsistence. As an attempt to secure to a portion of the community the same supply of food in scarce as in plentiful years, and consequently to relieve them from the necessity of those retrenchments by which a deficient supply is distributed over the whole year, and absolute famine averted, the act was further liable to be considered as a gross absurdity. The evils of the regulations themselves were increased by peculiarities in the administration, by which the labouring-classes became a means of enabling one class of rate-payers to carry on a constant warfare against the pockets of another. The general evils of the poor-laws were much aggravated by the arrangements with respect to *settlement*; virtually, the labouring-classes were *imprisoned* in the parishes of their nativity, or where some subsequent circumstance, as apprenticeship, marriage, and inheritance, had given them a claim. Thus the population was distributed, not as required by the demand for labour, but as certain accidental circumstances might direct; and accordingly there were often hordes of useless labourers at one place, and a great amount of labour without hands to undertake it in another. 'Practically,' says the Reviewer, whose opinions have been already quoted, 'in a pauperised district, where the labourers' wages were composed partly of wages and partly of allowance, the married man had no more free-will as to the parish in which he should reside, the master whom he should serve, or the subsistence which he and his family should receive, than the horse which he drove. In parochial language, he *belonged* to the parish in which he had his legal settlement.'

There can be no doubt that the condition of the working-classes in England during the prevalence of this system was a species of slavery. The system lasted with little alteration for nearly forty years; but long before that time its moral evils, and the enormous increase of expenditure which it demanded, had excited great alarm, and made England, with regard to this particular part of its domestic polity, a wonder to neighbouring nations. The sum raised for poor-rates in 1776, while the workhouse system of 1723 was still in operation, was only £1,720,316; in the three years after the passing of Gilbert's Act (1783-4-5), it averaged £2,167,749. But the average of 1801-2-3 was £5,348,205; in 1818, a year of scarcity, it reached the enormous sum of £9,320,440; and even in the fair seasons of 1830, 31, 32, and 33, it was above eight millions. This was an increase far exceeding that of the population, and the more alarming, as it took place during a period of progressive national prosperity. Almost everywhere it pressed very severely upon the property of the country, and in some places had even caused property to be abandoned, the rates exceeding all that could be derived from the land.

The evil being generally felt and acknowledged, a royal commission was issued in 1832 for inquiring into it, in order that parliament might apply a remedy. The following, taken from the second edition of M'Culloch's 'Statistical Account of the British Empire,' is a condensed summary of the report which this body drew up, after a careful investigation conducted throughout

every part of England and Wales:—'That wherever the expenditure had most increased, there also the industry of the labourer had proportionally degenerated, because in such places subsistence from the poor-rates was more easily obtained than by labour. That under such influences his prudence and thrift were discarded, because they could, with the utmost success, only secure for him, by present sacrifice of enjoyment, the same future advantages of which the parish held out a prospect without the necessity of any sacrifice save that of independence. That his sobriety and temperance were thus left without encouragement, and, on the other hand, exposed to the temptations of comparative idleness, and the facilities for the indulgence in idleness and intemperance which always accompany the growth of pauperism: his respectability of demeanour was now useless, as respectability of character ceased to be relied on as a means of securing employment, itself no longer an object of desire. That in the same proportion as he became independent of regular industry, did he also become independent or regardless of the comforts of his home—comforts which are indispensable to the labourer after a day of toil, but are rarely sought or valued as a change after a day spent in idleness or dissipation.

It was also observed that, as the habit of pauperism increased, the standard of subsistence of the labourers in the district was lowered, the relief never being sufficient of itself to maintain the pauper independent of all work; and yet, by rendering him partially so, constantly tempting him to forego that further portion of comfort which was attainable only on the comparatively hard terms of earning it by the sweat of his brow. The standard of the pauper's subsistence being once lowered, that of the industrious labourers amongst whom they lived, and who occasionally felt the effects of their competition, fell also. Where the system prevailed of allowing relief in aid of wages, there the operation was immediate, as all the labourers were at once pauperised, being equally exposed to the effects of a system which left all industry, beyond a certain point, without its reward, and therefore without a visible object. While these influences were destroying the industry and morality of the able-bodied labourers, the bastardy-law was holding out encouragement to female unchastity, in the way of a money allowance for each bastard, which, by its amount, of itself elevated her condition in proportion to the number of her spurious offspring, rendering a mother of several bastards better off than she would have been as a mother of as many lawful children, and securing her a dower which usually tempted some man to marry her; while the same law, by subjecting the supposed father to punishment, often subjected him, at the woman's discretion, to the alternative of marriage or a jail—the former of which was generally chosen as the least present evil. Under these influences female chastity had in many districts so far ceased to be valued as a virtue, that not only the woman herself, but her parents and her husband seemed, where the law had had its full uncontrolled effect, to have become indifferent to it.

The evils of the system were not confined to the paupers, but unhappily extended to all who had to administer the law. So large a fund as between seven and eight millions, administered without any practical responsibility, naturally tempted the cupidity of the officers through whose hands it passed. The office of overseer was therefore generally sought by a class of small farmers and tradesmen, to whom the office must have been most burthensome had it been discharged gratuitously as the law provided. It was found that the overseers were usually appointed, in places where the evil had reached a great height, not from the class of the *substantial householders* of the parish, as the statute of Elizabeth requires, but were usually needy persons, to whom the indirect advantages of the office were important, and who were helped into the office by the efforts of persons similarly interested, either as tradesmen of the parish, or as owners of the dwellings which the paupers inhabited, or in other ways, more as receivers, directly or indirectly, of the rates, than as rate-payers. The spirit of the enactment, 45 Geo. III. c. 54, § 1, which provides that no contract for the lodging, keeping, or maintaining the poor, or for taking the benefit of their work for their better maintenance, shall be valid, unless the person with whom it is made shall be resident within the parish, was fully carried out in practice in nearly the whole of the 15,000 parishes and places separately maintaining their own poor—every tradesman of the parish, and every employer of labourers, being bribed to maintain whatever system the vestry adopted, by a share in the profitable supply of the parish poor, or by the payment of a part of the wages of his labourers in the shape of relief to them out of the rates. The refractory parishioners were constrained to acquiesce, on pain of losing these and similar advantages, which, being withdrawn or denied, left to them only the obligation of paying those rates. To secure, moreover, the full operation of this system, the parish was not permitted to deal elsewhere for any commodity with which any parishioner could supply it, and was thus usually confined to the worst market for the goods it purchased, in the same manner as, by the laws relating to labour, it had been cut off from the supply of other labourers while any within its own bounds remained unemployed.

The evidence seems also to prove that the functions of the magistracy had almost invariably ceased to be applied to the objects for which they had been created. The magistrates of counties were usually too dispersed, and too little immersed in the actual business of the several parishes, to avail themselves of the advantages which the overseers and the other more immediate administrators of the system derived from it. The magistrates of corporate boroughs, towns, and cities, were, however, in many instances found to be not less rapacious or ready to apply the administration of the law to their pecuniary profit or direct advantage than the parochial officers. But although the magistracy must generally be acquitted of having sought to derive an immediate pecuniary advantage from the administration of the poor-laws, they were none the less ready to pervert the law to purposes utterly at variance with its original intention and with the prosperity of the community. Very many of the magistrates, influenced by benevolent intentions, were ready on all occasions to admit the claim of the pauper, and to compel overseers to administer relief when they inclined to refuse it: such magistrates were constantly resorted to by paupers in preference to others who more vigilantly examined the grounds of their claims; and a reputation for being the *poor man's friend* was easily earned by the lavish and immoderate expenditure of the fund of the general rate-payers. This reputation was found to be useful in many ways, and was thus sought for political purposes, or for the attainment of local power, or for the mere gratification of vanity, by many magistrates, whose sympathy for the pauper would never have been excited if it had been incapable of being gratified at the expense of the rate-payers. When it is considered that the county magistrates lived for the most part in the midst of a population of willing paupers, and the means of annoyance which the latter possessed, if they found occasion to use it, against an obnoxious person, is also borne in mind, it is not to be wondered at that the magistracy generally purchased the good-will of their neighbours by sacrificing the interests of the rate-payers, whom they never had personally before them, and who were very inadequately represented by the overseer, whose interests were too frequently found to coincide more with the demand of the pauper and the inclination of the magistrate than with the strict line of his duty.'

In consequence of the report of the commissioners, an act was passed in August 1834 (4 and 5 Will. IV.), usually called the *Poor-Law Amendment Act*, by which these monstrous evils were for the most part extinguished, and a return made to the just principles

and practices dictated by the acts of 1601 and 1723. Both parties in the state supported this measure in almost all of its provisions, and it was only opposed by a few individuals. As a proof of the public feeling on the subject, we present the following extracts from the two leading Reviews; and all who know anything of political parties and their connections in this country, will be ready to own that no better means could be fallen upon.—The 'Edinburgh Review' of March 1831, after remarking that the intended benevolence of the allowance system had proved a 'bitter curse;' that it robbed the rate-payer to pay farm-labour, and enslaved the labourer, adds, that '*its abolition is the imperative duty of the legislature.* We say abolition, for nothing short of this can be of any material service.' The 'Quarterly Review' of January 1834, after making an extract from the part of the Commissioners' Report drawn up by Mr Chadwick, says—'It is gratifying to us to find the immediate abolition of the allowance system here insisted upon so strongly. We might have wished this suggestion to have taken precedence of every other, as being *by far the most important and indispensable of any.* An improvement in the management of workhouses is highly necessary. *They should be made places of strict confinement and hard labour to the able-bodied*, with a moderate diet, and a *total denial of all indulgences*, in order to render a residence within their walls *as irksome and distasteful as possible*, and the last resource of those only who cannot, by their utmost exertions, obtain a maintenance.'

With regard to the impotent poor, this act rather increased than diminished the liberality of the arrangements, while it made several other considerable improvements. The great class of adult persons who, from old age or infirmity of body, are wholly unable to work, were to remain, as before, entitled to a support by means of out-door allowances. Of destitute children, those unlikely, from natural defects, to be able to win their own bread, were provided for by out-door relief: those, on the other hand, who were likely to prove useful members of society, were taken in charge, and reared in separate establishments, where their education and training for industrious callings were particularly cared for. Judicious provisions were also made for their being ultimately set afloat in the world as apprentices. With regard to illegitimate children, several former provisions of evil tendency were annulled; and it was provided that no regard should be paid to them till they became actually chargeable upon the parish, when relief should be extended through the mother, she being in this respect treated as a widow. Persons unable to support themselves through accident, or from sudden and dangerous illness, were to receive temporary relief, and to have all necessary medical attendance. Insane paupers were to be placed in proper asylums at the expense of the public.

The provisions for *able-bodied* claimants formed the most important part of this act, as indeed it was in this department that the abuses of the old system were the most glaring. The main feature of the new arrangements was the erection of workhouses by unions of parishes, where relief should be offered to able-bodied claimants, on the condition of their giving their labour in return, and submitting to the rules of the establishment. This was only a revival of the *test* applied by the act of 1723, the object being to check applications for relief from the slothful, and to throw upon the able-bodied in general the duty, which is everywhere else the lot of free labourers, of finding employment for themselves. The new law contemplated that the food and accommodations of the workhouse should be good and sufficient, but yet not quite so good as those which the free labourers of the district could obtain by their own exertions; so that it might, upon the whole, be more agreeable to the able-bodied man to work for himself than become chargeable. At the same time, it being acknowledged that a change from one system to another could not be expected to be suddenly effected without some degree of hardship, provision was made for enabling the administrators of the law to exercise a humane discretion in applying the new regulations.

Some material changes were likewise made in the machinery for the local administration of the poor-laws. The rate-payers elect for each union of parishes a board of guardians, each rate-payer having votes in proportion to his property, and the proceedings of these boards were under the control of a central board, composed of three commissioners appointed by the crown. (See next page.) Under the chief commissioners there were twelve assistant ones, each of whom had the inspection of a particular district.

Gradually, under the operation of the Poor-Law Amendment Act, the greater part of England has been formed into unions (now 592), each under a board of guardians, and each provided with a workhouse. In the first year of the new system the commissioners issued a general order, prohibiting relief in money to the able-bodied in the employment of individuals, thus throwing their entire support upon their masters. In the second year they began, in a cautious manner, in obedience to the spirit of the act, to put a stop to out-door relief to the able-bodied—meaning labourers who, with their families, are in health, but excepting widows with young children. By these means the expenditure upon the poor was reduced from £7,511,219 in 1834 to £4,0[illegible],741 in 1837, or almost to one-half. Since 1837, the expenditure has again been on the rise, and in 1840 it was £5,110,688. In 1847, the number of paupers (including children) relieved in England was 1,721,850, or about 1 in 9 of the population. Of these, 265,037 received in-door relief; 1,456,813 received out-door relief. The amount received was £7,117,352; of which £5,298,767 was expended on the poor, £899,095 on in-door maintenance, and £3,467,960 on out-relief. In 1848, the number of paupers (exclusive of children, who number about 300,000) was 1,626,201; of whom 1,361,061 received out-door, and 265,140 in-door relief, at a total cost of £6,180,765!

The first effects of the stop put to the allowance system were most surprising. The so-called surplus population—the hordes of unemployed men who had required to be partially or entirely sustained by the parish funds, who had been condemned to stand in the parish pound for days and spend half their lives in a kind of idleness in the parish gravel-pits—disappeared as if by magic. It was found that, left free to seek employment where it could be had, and furnished with the usual motives to exert their industry, they all obtained employment. On this subject the earlier reports of the commissioners gave some valuable information, showing how delusive must have been those views which held forth the population as redundant, and as needful of artificial support. The whole evil seemed to be one of derangement. Once disengaged from the trammels which confined men to certain spots of ground, and put a bounty upon their remaining idle, the people quickly fell once more into natural arrangements, and there was an independent maintenance for all. To quote an able writer in No. 74 of the 'Edinburgh Review'—'When the bonds which confined them to their parishes were broken, they distributed themselves where their services were most wanted. When they were allowed the free disposal of their services, they endeavoured to make those services valuable. When the application of more efficient labour increased the employer's returns, and at the same time reduction of rates diminished his out-goings, he had a larger fund for the purchase of those services. The redundancy vanished with its causes. The able-bodied pauper is the result of conventional error and art. He is not the natural offspring of the Saxon race. Unless his pauperism is carefully fostered by those who think it their interest to preserve it, he rapidly reverts to the *normal type*—the independent labourer.'

The union workhouses are in general remarkably well-arranged establishments. The food, both in quality and quantity—the accommodations of all kinds—the moral discipline and order, are in general all that

the humane and the enlightened could wish. The arrangements for the education of the young are particularly worthy of commendation. Workhouses are for the most part occupied only by some portion of the aged poor, and by young children. Though held open for the reception of the able-bodied under any exigency to which they may be presumedly liable, they are rarely resorted to by such persons, partly because the labour-market being freed, there is in general no lack of means for an independent subsistence, and partly from the natural dislike to a life of restraint. One regulation of these houses may be supposed to have operated powerfully in keeping idle married men at a distance from them. In most instances they are not allowed to live in the same part of the house with their wives. Partly this was needful for the sake of order, and to avoid sundry gross evils which flourished under the old system. Partly it is owing to a principle laid down by the commissioners, that a pauper is not entitled to be in this respect on a level with the man who works independently for himself and his family. This regulation attracted much clamour and vituperation, and perhaps it would have been better, at least in point of expediency, not to have had it introduced.

The new law has now been in existence for fifteen years, during which period it has undergone various minor modifications—chiefly affecting the administrative machinery, the subject of medical relief, the care of pauper lunatics, the relief of vagrants, the law of settlement, the education of pauper children, and other improvements which the condition of the country, for the time being, has rendered expedient. The main alterations which it has undergone are under the provisions of an act (10 and 11 Vict., chap. 109) passed 17th December 1847. By this act the commissioners are superseded by a controlling board, consisting of four members of the government *ex officio*, and certain other commissioners appointed by the Queen in council. The inspectors are also vested with more extensive powers; visitors of workhouses are appointed; annual reports are ordered; and the law compelling the separation of man and wife dispensed with after the parties are sixty years of age.

Excellent as the measure has been in its main features, and though it has redeemed the English labouring-classes from a kind of slavery, it has been the subject of an outcry of the most violent character. This is partly traceable to those who profited by the abuses of the old system, partly to an ignorant sentimentalism, and partly to the arts of politicians, who, by appealing to the prejudices of the masses, make the subject a handle for their selfish and party purposes. If the system has been violently attacked, it has also been as warmly defended; and in the midst of so much scrutiny, the disinterested may rest assured that no very flagrant abuse can be long committed by those who administer its provisions, or suffered by those to whom its provisions are administered.

ARRANGEMENTS RESPECTING THE POOR IN SCOTLAND.

For a long time there were no poor-laws of any sort in Scotland. The poor were left totally unregulated, and matters became at length insufferable. The whole country was overrun with hordes of sturdy ruffians, who lived at free quarters upon the industrious, a farmer having not unfrequently to provide food for a score or two of able-bodied 'sorners' in the course of a day. These vagabonds, often living in incestuous connections, held routs and revels by thousands in the mountains, and attended punctually at all country fairs, weddings, and festivals. Legislation on this subject opened with three acts passed in the reign of James I. in 1424, which conferred a right to beg with 'takinnes,' on the same classes of paupers who subsequently obtained a right to relief by 1579, c. 74. This last statute, with a proclamation of the Privy-Council, was, until lately, the only authority for a compulsory poor-rate in Scotland. It consisted of two parts: One ordained 'strong and idle beggars' to be scourged and burnt through the ear with a hot iron; and if caught again at their vocation after sixty days, to be put to death. The second conferred a right to parochial relief on certain parties, whom it designated as 'aged, pure, impotent, and decayed persons,' 'quhilk of necessitie mon live bee almes.' Some subsequent acts made provision for employing able-bodied beggars in common works, and ordained the building of correction-houses, under heavy penalties on the burghs disobeying; but not a single correction-house was ever built, and that part of the law became obsolete. The last proclamation of the Privy-Council, March 8, 1698, completed the fabric of the old poor-law, which was superseded by the Poor-Law Amendment Act of 1845.

There were many disputes in respect to the classes of poor which were vested with an absolute right to require relief under the old law. The general understanding was, that the Act 1579 only included all who were permanently disabled from age, sickness, or infirmity from gaining a livelihood by labour, destitute children under fourteen years of age, insane persons, and idiots. In practice, also, destitute widows, with several young children, generally received some small modicum of relief; those who were temporarily destitute or infirm were understood to have no legal claim on the parish, but might be relieved at the discretion of the authorities. Speaking in very general terms, a settlement was acquired by three years' continuous residence in a parish. Wives had the settlement of their husbands; legitimate children of the father, and illegitimate children of the mother. When there was no other settlement, recourse was had on the parish of birth.

Where there was a legal assessment, the general purpose seems to have been to tax every man in the ratio of his means. Accordingly, originally the parochial board stented every individual's proportion according to their own estimate of his ability; and if he demurred, he had to lay bare his whole affairs before officials bound to no secrecy. This was so burthensome, that a rough-and-ready criterion was adopted wherever it was possible. In rural parishes, half the assessment fell on the heritors, according to their real or valued rents, and half on the other householders, in whose case the rent of the houses occupied was generally made the criterion. In burghal parishes the value of the tenements was the criterion; and sometimes the assessment was laid altogether on the tenants, sometimes altogether on the proprietors, and sometimes half on the one and half on the other. In mixed parishes the grievous plan of stenting seems to have been continued. Often, however, the assessment was entirely voluntary, and in the majority of cases there was no assessment at all. Relief was given from the collections at the doors of the parish churches, half of which had to be paid into the general fund, the other half remaining at the disposal of the kirk-session.

The administrators of this fund were—in burghal parishes, the magistrates; in landward parishes, the heritors and kirk-session; and in the latter, when vacant, the heritors alone. These bodies had almost despotic power over the pauper—the mode and extent of relief being in practice at their discretion. The only authority competent to review their decisions was the Court of Session; and it refused to interfere with the amount of relief given, unless it was altogether illusory. On coming into that Court, the pauper, if an agent of the poor reported that he had a probable cause of action, was put upon the poor's roll, and had counsel assigned to him. Practically, the parochial boards could do as it seemed good to them: there was no central administrative board of any sort.

This state of matters gave rise to great discontent and many complaints, and ultimately a commission of inquiry was instituted, whose report filled eight quarto volumes, and contained a vast amount of interesting information. This report was laid before parliament in May 1844. It presents a very vivid picture of the state of the paupers throughout Scotland at and previous to that date. Their condition

varied much in different parishes and in different parts of the country. In Glasgow and some other places they were comparatively well off; and even in districts where the allowances were wretchedly inadequate, they were not so utterly miserable as they seemed, when considered in reference to local circumstances and the condition of the independent poor. Still the operation of the law was far from satisfactory. To take, first, the Edinburgh parishes: the weekly allowance to a widow with one child was 1s.; the very highest to a widow with six children was 3s., which was considered extraordinary; to a married couple the allowance was at the utmost 7s. 6d. in six weeks. The house was overcrowded; there was no classification of the sexes; and the deaths for five years averaged 80 every year out of 420 inmates. In St Cuthbert's, a widow with two children received 1s. a week. In the Highlands things were much worse. In Shildag in Ross-shire the general yearly allowance was 5s. to 6s.: in Kirkwall, a widow with children received 2s. 6d. a quarter: in Stornoway, a widow with four children received from 4s. to 8s. a year; and in Gairloch, 2s. 6d. to 5s. a year. Often the whole sum annually divided in a parish was two or three pounds, as in Kilchonan in Islay. Of course begging was the natural and necessary supplement of the allowance. In many instances the pauper made a livelihood by continually roaming in quest of a settlement that never came, and this imposture had become intolerable. Maniacs were allowed in general to rove as they chose, or boarded in unlicensed and unregulated houses. In short, an immediate change was necessary, and the commissioners reported to that effect.

The Poor-Law Amendment Act was the consequence of this report. Its great feature was the creation of a Board of Supervision, 'to inquire into the management of the poor in every parish and burgh of Scotland,' and to report annually to the Home Office on everything connected with the state and management of the poor. It was to fix the number and qualification of the elected members of parochial boards; divide parishes into wards, and allot to each its proportion of representatives; dismiss inspectors and medical officers; and exercise other powers of the most extensive kind. The act sanctioned three modes of assessment: (1), One-half on owners, and the other on tenants or occupiers of lands and heritages, rated according to the annual value of such lands and heritages; (2), One-half on such owners according to the same rate, and the other half on the whole inhabitants according to their means and substance, other than lands and heritages in Great Britain and Ireland; and (3), The whole as an equal per-centage on the annual value of all lands and heritages, and on the estimated annual income of the whole inhabitants from means and substance, other than lands and heritages within Great Britain and Ireland. The act also sanctioned the continuance of any other mode of assessment established by local act or usage.

In the event of no legal assessment, the old administrators were to remain. In assessed burghal parishes the boards were to consist of three elements: (1), Four members sent by the magistrates; (2), Four by the kirk-session; and (3), Members elected by the rate-payers. Each owner of heritable property under £20 of annual value was to have one vote; from £20 to £40, two votes; £40 to £60, three; under £100, four; under £500, five; above £500, six. Occupancy and means and substance were to entitle to votes, rising in number according to the same gradation. Parties might vote both on ownership and means and substance, but could not have more than six votes in all. In rural assessed parishes, the boards were to consist of four elements: (1), Owners of heritable property of the yearly value of £20 and upwards; (2), Magistrates of any royal burgh within the parish; (3), Not more than six members of the kirk-session; (4), Members elected by owners of heritage under £20 annual value, who are to have one vote; and by tenants and occupants, and persons assessed on means and substance, who are also to have one vote under the same annual value, and to have more votes according to the gradation we have already specified. No person was to be rated on means and substance under £30 a year. In assessed parishes, the whole of the church-door collections were left at the disposal of the kirk-sessions.

On an application for relief, the inspector was ordained to return an answer within twenty-four hours. If the applicant were entitled to relief, it was to be instantly given, recourse being retained against his relatives, if legally liable, and against the parish of his settlement when found. On refusal, the sheriff was to be applied to to enforce the claim; and he might also grant interim relief till the question was decided. He was not, however, to decide in regard to the adequacy of relief. If there was any complaint of that kind, the complainant was directed to apply to the Board of Supervision, who might either reject the complaint, in which case no other court was competent to take it up; or approve it by a minute, which had the effect of opening the doors of the Court of Session to the pauper, and putting him on the poor's roll. Irish and English paupers were made removable, when they had acquired no settlement in Scotland, by an order of the sheriff or of two justices, at the expense of the complaining parish; and if they returned to the same parish, might be imprisoned with or without hard labour for not more than two months. Desertion of children was made punishable by fine or imprisonment with or without hard labour—payment of the fine to be enforced by imprisonment. The parochial funds might be applied to provide medicines, medical attendance, nutritious diet, cordials, and clothing to the paupers, and education for the pauper children. Boards might also subscribe to public hospitals or dispensaries, and might erect poor-houses when the population of the parish or combination of parishes exceeded 5000.

Some time after the passing of this act, the question of the right of the able-bodied unemployed and of their children to parochial relief was set at rest. The cases were those of the inspectors of the parish of Gorbals against William Lindsay, who applied for his children, and the inspector of Glasgow parish against M'William, who applied for himself. The circumstances were in the most favourable form for the paupers, whose allegations were all admitted; and the whole court was consulted, when it was nearly unanimously found that an able-bodied man, utterly destitute, and unable to find employment, had no legal claim against the parochial funds, either for his own relief or that of his children in pupilarity. Of course parochial boards might relieve such parties at their discretion.

The Board of Supervision, appointed under this important act, entered on its duties on the 4th of September 1845, and gave in its first annual report in August 1846. At that date all the parishes had elected inspectors, and more or less willingly provided funds. Reports were also presented in August 1847 and August 1848. A few statistical facts will show the working of this statute:—

In the year ending 1st January 1836, the sum expended on the poor did not exceed £171,042: in the year ending 1st February 1846, it amounted to £295,232, an increase of £124,190 in ten years: in the year ending 14th May 1847, it was £433,915; and in the year ending 14th May 1848, it was £544,334.

The number of poor on the rolls on 1st February 1845 was 63,070, or about 1 in 42 of the population: on the 1st February 1846, it was 69,432, or about 1 in 38: on the 15th May 1847, it was 74,161, or about 1 in 35·3. The total number of paupers of all sorts relieved during that year was 146,370, or about 1 in 17·8 of the population. On 14th May 1848, the number of poor on the rolls was 77,732, or 1 in 33·7 of the population. The total number relieved during that year was 227,647, or 1 in 11·51 of the population.

At August 1848, 14 poor-houses, 5 of which were temporary, were in operation in 14 parishes, the population of which was in all 548,745. The houses were

capable of accommodating 2193. Plans had been approved of by the Board for 8 new poor-houses, and 2 additions, representing accommodation for 2910 more paupers. Five other parishes had resolved to erect permanent poor-houses.

The whole sum of £544,334, 7s. 6¾d. expended in the year ending 14th May 1848, was thus accounted for:—Relief of poor on the roll, £401,885, 7s. 5d.; *casual* poor, £53,384, 7s. 7½d.; medical relief, £30,539, 12s. 8d.; management, £42,088, 13s. 4½d.; litigation, £3719, 6s. 11½d.; poor-house buildings, £10,971, 12s. The whole sum derived from church-door collections was £14,898, 2s. 2d.—of which £8452, 13s. 7¾d. was stated to have been expended for the relief of the poor.

Under the old system, parochial boards were under no obligation to send lunatics to licensed asylums, which gave rise to gross abuses. That was altered; but the Board of Supervision was much hampered by the want of accommodation in the asylums. The total number of insane or fatuous paupers in the year ending May 1848 was 3480. The Board examined into 2003 cases where the patients were not confined; ordered 38 to be immediately removed to some madhouse, and dispensed with the removal of 1960 on the ground of insufficient accommodation, harmlessness, or the like.

At the date of the first report, arrangements were in progress in Edinburgh, and also in Glasgow, to institute Industrial Schools for the pauper children, and at present the subject of pauper education is exciting more and more attention. In parishes where there are no magistrates or police commissioners, the boards are appointed to carry out the provisions of the Act 9 and 10 Vict. c. 96, for the removal of nuisances. They had also important duties under the Temporary Health Act; and the legislature manifests a disposition to render them bodies of great future importance.

There still remains, however, a great deal of dissatisfaction with the working of the present poor-law; and a number of delegates from the various boards met in Edinburgh lately to discuss the subject. One topic of complaint was the facility with which Irish and other paupers, not Scotch, obtained interim relief and also a permanent settlement. Glasgow and other towns were grievously burthened in this way. Some of the heavily-rated and poorer parishes also were anxious for a national settlement, and some of them wished combination with richer neighbouring parishes. In fine, judging from the present tone and temper of the country, the existing system is destined shortly to undergo very considerable alteration.

ARRANGEMENTS RESPECTING THE POOR IN IRELAND.

In Ireland there was, till a recent period, no systematic provision for the poor, but the country was by no means destitute of institutions designed for their benefit.

Legislative enactments had progressively, during the last century, established county infirmaries, dispensaries, lunatic asylums, houses of industry, and receptacles for destitute infants and old people; and similar institutions, together with schools, lying-in hospitals, houses of refuge, and mendicity houses, had been set on foot in various places by private benevolence. But while much was thus done for the alleviation of temporary and casual distress, there was a mass of mendicancy, and an amount of general suffering from occasional famine and consequent epidemics, which made Ireland singular among the countries of Europe. It was calculated that, out of a population of between seven and eight millions, upwards of two millions were in a state not much short of permanent mendicancy. The great bulk of the people being an agricultural peasantry, living on small patches of land, and depending mainly on the potato crop, a failure of that product was attended with wide-spread misery, invariably followed up by destructive fevers. The epidemic of 1817, which was the effect of the failure of the crop of 1816, affected a million and a-half of persons, and carried off 65,000. The people, moreover, having no resource but their little patches of potato ground, landlords found that they were rapidly losing all power over their property. Desperation made the tenants cling to their ground with a pertinacity which nothing could overcome. A common danger having united them in one common cause, the forcible extrusion of a tenant was resisted by one and all, or, if effected, it was sure to be savagely avenged. Practically, the tenant was able to remain on the ground as long as he chose, without much regard to the payment of rent, unless his *good-will* was purchased either by the new tenant or by the landlord. The inconveniences experienced in consequence of the bulk of the people being thus always on the verge of destitution, and without any resource when they reached that point, had become, in addition to those of actual mendicancy, so grievous, that a poor-law began to be contemplated as necessary for Ireland; and in 1833 a royal commission was issued for an inquiry into the subject.

In consequence of the report of this body, an act was passed (1 and 2 Victoria, c. 56) for the introduction of a modified poor-law into Ireland. In the principal arrangements, those adopted in England under the Poor-Law Amendment Act were followed; and the general superintendence was confided to the same commissioners. 'The chief peculiarity of these laws,' says Macculloch, 'is that relief under them is administered solely in workhouses; and thus they differ from the Scotch poor-laws, under which workhouses have scarcely been made use of at all, except in a few large towns; and from the English poor-laws, which were intended by the legislature to be a mixed system of relief to the able-bodied in workhouses, and of relief to the impotent poor, partly in workhouses and partly at their own homes. They differ again from the English and Scotch poor-laws in this, that while in England all destitute persons have a legal right to relief, and in Scotland all destitute impotent persons have a similar right, in Ireland, on the contrary, no individual was intended to have a legal right to relief; but at the same time, whether able-bodied or impotent, he may equally receive relief in workhouses, provided he is destitute.' Under this law, which has already undergone several modifications, the expenditure for the poor in Ireland for the year ending 1st January 1846 was only £316,026, and the number of paupers receiving in-door relief, 43,293. By December 1848, partly from successive failures of the potato crop, and partly from the unsettled state of the country, the number of in-door paupers had increased to 185,825, and the out-door to 393,421. During that year the sum expended was £1,855,889—an excess of more than £200,000 above the rates collected. To meet this state of matters is the object of the Rate-in-Aid bill, by which the whole country is to be assessed, for the purpose of making up any deficiencies that may occur within the poorer and more heavily-burthened unions.

GENERAL OBSERVATIONS.

Poor-laws are, after all, only an expedient for meeting an evil partly inherent in human nature, and partly the consequence of its erroneous moral and political condition. Were all born equally sound, and were all so instructed and so placed socially that each man realised a reasonable sum for his labour, and was disposed to make a proper use of his gains, there would be no need for poor-laws. Such conditions not existing, this expedient is unavoidably called into use, and we must not be surprised that, as one designed to meet great evils, its own operation is attended by less ones. By far the worst effect of poor-laws is the moral degradation which they produce in those for whose benefit they are established. The man who has to ask for public relief to his necessities, loses from that moment the self-respect on which much of his virtue depends. A fatal lesson is taught him—that his wants may be supplied without his own exertions—and the motive to an independent and industrious course of life is greatly shaken, perhaps destroyed. This is itself an evil of such serious magnitude, that it forms with

many an insuperable objection to all regular provision for paupers. Such may be said to have been, till a recent period, the public feeling of Scotland on this question, and it still is the predominating sentiment of a large portion of society in that country. It is an objection which we, for our own part, would have difficulty in overcoming, if we did not see around us the awful effects which an inadequate provision for the poor works in the present condition of society. Unquestionably nothing but a consideration of the horrible inhumanity, and the extreme dangers to the common weal, which are inseparable from the neglect or repulse of pauper claims, could excuse the deterioration which we unavoidably effect in a man's nature, by giving him that for which he has not laboured.

Another great evil of poor-laws is, that they take away part of the fruits of industry from those who have legitimately acquired them, and bestow them upon the idle. Industry is by this means discouraged, and sloth and improvidence are in a proportionate degree fostered. In England this had reached to an enormous height, and even now the abstraction of six millions from the gains of the industrious must operate very seriously in retarding the progress of the country. It is, however, a tax unavoidable in present circumstances, if we would escape more serious evils.

While a reasonable doubt can scarcely be entertained as to the propriety of both succouring the helpless and offering a modified provision to the able-bodied in a needful state, it must be equally clear that the more that habits of foresight and self-dependence are propagated in the country—the more that all-sustaining moral influences are diffused through it—we may expect to see the less need for poor-laws. Although there are upwards of thirty-two millions in savings'-banks, and benefit societies are widely spread, still the great bulk of the labouring-classes of this country live from hand to mouth, without any store whatever on which to fall back in the event of sickness or an occasional lack of employment. This is a preposterous state of things. What is to be expected of a people, the great bulk of whom are contented to live with only a little accident between them and a state of dependence on private or public bounty? Sickness is what all are liable to at all times; failures of employment take place at frequent intervals everywhere. There surely might be some better provision against such contingencies than a public provision, which makes the recipient a degraded man for ever. Individuals might be induced, by an improvement of the moral agencies of the country, to do much for the securing of their own independence; and the remainder of the required provision might perhaps be obtained by systematic contributions from the labouring-classes towards a common fund, from which succour could never be a degradation, seeing that they had themselves created it. Proposals of this kind are apt to strike the mind unfavourably, from their being new; but the position at which this country has arrived is in some degree new, and accordingly calls for measures of a different kind from what we are accustomed to contemplate. Certainly, while only the expedient of poor-laws is adopted, the community can never be inspired, in all its departments, with that manly and independent feeling which is the inseparable associate of all the other virtues, and the great distinction between the freeman and the slave.

LIFE-ASSURANCE.

Life-assurance, in its ordinary character, is a means of securing, by a present payment in full, or by an annual payment, a sum to be realised after the decease of the party. It is obvious that, to many persons, the having this in their power is of great importance. To none is it so important as to individuals in the middle walks of life, who, for the present, are perhaps able to maintain their families in comfort, but being unable to accumulate a large surplus capital, cannot be sure that, in the event of their death, those dependent on them will not be thrown into poverty. To such persons life-assurance presents itself as a ready and convenient means of providing for those in whom they are interested. With a certain annual sum laid aside from a professional income, or from the profits of trade, such a person can make sure that, though death cut him off abruptly, his widow and children will have something to look to, either for an entire maintenance, or to aid in enabling them to gain one for themselves. By the same means an individual, possessing an entailed estate, can make provision out of its current rents for those younger and female children, who, at his death, would cease to be benefited by it. An individual, also, incurring a risk in behalf of another, or having a large claim upon him in the form of debt, can insure upon the life of that person such a sum as would be sure to cover all loss in the event of that person's sudden death. There are many other circumstances in which life-assurance may become highly beneficial; but its chief utility lies in securing a certain sum to helpless persons, in the event of the decease of those on whom they depend.

The principle on which life-assurance mainly rests is one which it has been reserved for modern times to discover—namely, that while the duration of the life of a single person is of all things the most uncertain, it is possible to ascertain, with tolerable accuracy, how many of a *multitude* of persons, of a particular age, will die within next year, how many in the second year, how many in the third, and so on. The medium or average gives what is called the *expectation of life* for each person of the set. A certainty, in short, is attained on this proverbially uncertain subject, when we take a great number of persons, and consider them with regard to the circumstances in which they live. It is found, for instance, that of 100,000 persons, aged 52, residing in this country, the number who will die before another year has elapsed will be about 1521, or rather more than one and a-half per cent. Supposing that these 100,000 persons were to associate for the purpose of making sure that the widows or other heirs of all those who died within a year should have £1000; it would only be necessary in that case for each person to contribute as much to a common fund as would make up £1,521,000, or a thousand times 1521; that is to say, each would have to pay in £15, 4s. 2d. It is clear that those who died, or their heirs, would profit to the extent of £984, 15s. 10d.; but without injury to those who survived, for these also had their chance of gaining, for which it was but fair that they should pay. This would be a simple transaction in life-assurance, and may serve to convey an elementary idea of what life-assurance is, though in practice the transactions are usually of a somewhat more complicated kind.

An assurance is rarely transacted for a single year. The object of most is, to pay a certain sum each year, as long as they live, in order that a sum may be realised at their death. Assurers are also of various ages; the young have the expectation of longer life than the old. It therefore becomes proper that they should pay less than those more advanced in life. Indeed there ought to be a payment appropriate to each particular age; and this, accordingly, is the case. Another point calls for particular consideration. The payments being made, not to clear off one year's claims, but to make good a sum many years hence, large funds become accumulated, and upon the improvement of these much depends. If a high rate of interest is obtained, the funds experience a rapid increase, and the less payments are required to effect insurances. If, on the contrary, the interest realised be small, the insurers require to make their original payments so much the higher.

Life-assurance is effected in this country either in offices established by joint-stock companies, who look to making a profit by their business, or by mutually assuring societies. The former are shortly called *proprietary*, and the latter *mutual* offices. Offices of the first kind are usually held by a joint-stock copartnery, with a large subscribed capital; and the chief advan-

tage which they hold forth, is the ample security for all claims presented by the capital, and the respectability of the shareholders. In the case of a mutual office, there is only, it may be said, an association of customers, each of whom is concerned in insuring his neighbour. In this case, however, all surplusages, instead of going into the hands of a trading company, remain the property of the insurers, and are liable to be divided amongst them. For a long time the business was conducted almost exclusively by companies; but it was at length seen that all desirable security was to be obtained on the association principle; and for some years the system has been advancing much more rapidly than the other. In various instances, companies have scales of charges allowing of a participation in surplusages; and these are usually called *Mixed* Proprietary and Mutual Offices.

The existing British offices are upwards of 120 in number, most of them of recent origin. The oldest is the Amicable of London, established on the mutual principle in 1706. At the time when it was set up, no calculations as to life existed; and the conductors were accordingly obliged for many years to proceed in a great measure at random, charging the same premiums or annual payments for all ages under forty-five! The rates charged by the several offices are very various, but in all cases they have been found as yet sufficient for the risks. In most instances the companies divide large profits, while the mutual offices have realised equally large surplusages, which they have divided amongst the insurers, in proportions according to the sum assured and the duration of the insurance, or upon some other principle which the insurers may deem preferable.

Life-assurance grew up in the last and present centuries amidst such an imperfect knowledge of the data on which it depends, that there is little to be wondered at in the great variety of rates charged by the different offices. These data are now much better understood, and it has become possible to arrive at a comparatively close estimate of what charges are really required from an individual, in order to make good a sum at his death for the benefit of his survivors. There might be greater closeness still, if the laws of mortality, now so well ascertained, were alone concerned; but the rate of interest upon money also enters into the calculation, and this, as is well known, is liable to frequent fluctuation. Loose as the matter thus remains in some measure, enough is ascertained to admit of an approximation being made to something like a standard for the conducting of this important branch of business.

The rate of mortality and the rate of interest upon money are the two principal data on which life-assurance practically depends. We shall first consider

THE RATE OF MORTALITY.

Tables of mortality are founded on the assumption that human life is of a certain average endurance; and by means of them we estimate the number of deaths that may be expected among a given number of individuals, from the proportion that has been observed to occur among another class similarly circumstanced.

The tables of mortality adopted in this country as the basis of calculation for insurance companies are *three* in number. That known by the name of the *Northampton Table* is the oldest now in use. It is founded upon observations made by the celebrated Dr Price, of the deaths registered for the population of one of the parishes of the town of Northampton, during the years between 1735 and 1780. This table, it is now acknowledged, shows far too high (or rapid) a rate of mortality, owing partly to no effect having been given to the fluctuations in the population of that parish, from immigration and other such causes, and partly to the great improvement which has taken place in the value of life since the middle of last century, consequent upon the introduction of vaccination and other improvements in medical science, as well as in the habits and modes of living of the people. In 1827 a select committee of the House of Commons, appointed to investigate this subject, reported—'The evidence appears to your committee to be strong and decisive in favour of the use of tables which give an expectation of life higher than the Northampton. In truth, there is not even a *prima facie* case in their favour.'

The *Carlisle Table* was formed, not from the register of burials among a floating population, but from observations of the deaths which occurred, at each year of life, among a certain stated number of persons in the town of Carlisle. The observations were conducted by Dr Heysham, and the calculations made in the most scientific manner by Mr Joshua Milne, author of a valuable work on annuities.

Finally, the *Government Tables* were compiled from observations on the progressive mortality occurring among the government annuitants and other selected classes, distinguishing the sexes. They were prepared, under the directions of government, by Mr Finlaison, actuary to the National Debt; and in 1829 were adopted by parliament as the basis upon which their future calculations should proceed. Mr Finlaison's researches established the fact of the longer duration of female life. He also observed 'a very extraordinary prolongation of human life' in the course of the time over which his inquiries extended—so great, 'that the duration of existence now, as compared with what it was a century ago, is as 4 to 3 in round numbers.'

Besides these three, a table was framed by Mr Griffith Davies from the deaths reported from time to time among the members insured in the great Equitable Society of London, from its commencement in 1762 down to 1829, which has since been recalculated and continued down to a later period by Mr Morgan, the actuary to that society. This table is very valuable, as confirming the substantial accuracy of other observations, with which it very nearly corresponds. The relation which these tables bear to each other may be seen at a glance from the following table, showing the *mean expectation of life* at various ages according to each:—

At Age.	By Northampton.	By Carlisle.	By Government.			By the experience of the London Equitable.
			Males.	Females.	Mean.	
20	33·48	41·46	38·39	43·99	41·19	41·67
25	30·85	37·86	35·90	40·81	38·36	38·12
30	28·27	34·34	33·17	37·57	35·37	34·33
35	25·68	31·00	30·17	34·31	32·24	30·93
40	23·08	27·61	27·02	31·12	29·07	27·40
45	20·52	24·46	23·75	27·81	25·78	23·87
50	17·99	21·11	20·50	24·35	22·43	20·26
55	15·58	17·98	17·15	20·79	18·97	16·90
60	13·21	14·24	14·39	17·32	15·86	13·91

Independently of the acknowledged deficiency of the data on which the first-mentioned table is founded, the mere fact of its differing so much from any other authentic observation is of itself conclusive against it; and by parity of reasoning, the close agreement of the others affords strong presumptive evidence in their favour, and imparts a high degree of certainty to calculations based upon them. The Carlisle Table occupies a mean place between the male and female observations of government, showing a somewhat shorter duration than the mean of these. It also coincides very nearly with the experience of the Equitable Society. Considering that it is thus supported by two other sets of observations, and that the whole three extend over a period during which life was not so good as it has since become, the general opinion in favour of the safety of the Carlisle Tables for life-assurance may be held as well-founded. This opinion receives corroboration from the experience of the Scottish Widows' Fund, which extends over the last thirty-four years. In 1834 the auditor of that society reported, as the result of a careful investigation, 'that the expected number of deaths by the Northampton Table, which is the table of the society, is to the actual number during the whole progress of the society as 100 to

87; and the proportion of the expected number by the Equitable experience is to the actual number as 100 to 87.' We have understood that the experience of the Scottish Widows' Fund since 1834 is even more favourable to life. If, then, we were to take the whole thirty-four years' experience of this society as a criterion, we should come to the conclusion that the Equitable experience, the Carlisle Tables, and the Government mean, are considerably within the verge of safety, while the Northampton Tables are so far from the standard of modern life, as to be, particularly with regard to the younger class of lives, quite unfit for use.

We have now to advert to

THE RATE OF INTEREST,

meaning the rate at which the yearly premiums may be expected to be improved.

This subject is one which does not admit of the same certainty as the other, and on which, accordingly, there may be great differences of opinion. In 1829, Mr Finlaison writes—'I take it for granted that it will be considered safe enough to assume that money, in a long course of years, will so accumulate, through all fluctuations, as to equal a constant rate of 4 per cent.; because, in point of fact, money has hitherto accumulated at 4½ per cent., whether we reckon from 1803 or from 1783.' Other writers, again, and among them Mr De Morgan, looking chiefly to the high price of the 3 per cents. of late years, say that not more than 3½ per cent. should be counted on. Practically, the investments of assurance offices are made on terms much more favourable. It appears, from the published report of the Edinburgh Life-Assurance Company, dated December 1838, that for the three preceding years (1836, 1837, and 1838, when interest was unusually low), the average rate realised on their funds was £4, 16s. 6d. per cent.—about 1½ per cent. higher than the return from the 3 per cents. during the same time. And this, it is stated, was obtained without any part being laid out in the purchase of reversions—on which, it is known, a much higher rate can be got. The example of this office is quoted merely from the circumstance of their report happening to state the precise return at that period. Other Scottish offices are said to have obtained a higher rate. Most of them state that their funds are invested 'about,' 'at,' or 'above,' 5 per cent. Indeed it is not conceivable that the offices could make such large returns to proprietors and members, in the shape of dividends and bonuses, if they did not generally improve money at about the rate last mentioned. From all of these circumstances, it does not appear likely that calculations for life-assurance, in which the interest of money is assumed at an average of *four per cent.*, will, while Britain remains in nearly its present condition, prove unsound.

EXAMPLE OF LIFE-ASSURANCE CALCULATION.

According to the Northampton Tables, out of every 11,650 persons born alive, there will be 46 living at the age of 90. From these tables being ascertained to be unfavourable to life, this must be understood as not strictly the case, but it may be adopted for the sake of illustration. The same tables make it appear that, of the 46, 12 will die in the course of the first year, 10 during the second, 8 during the third, 7 during the fourth, 5 during the fifth, 3 during the sixth, and the last remaining life will fail in the course of the seventh year. It is a favourite mode of exemplifying life-assurance calculation, to suppose these 46 persons, aged 90, associating for the purpose of assuring £100 to each at death. They are supposed to proceed upon the principle of paying all that is required in one sum at first, thus forming a fund which is to answer all the demands which are to be made upon it. In this calculation the improvement of money has been assumed at 3 per cent. The object is to ascertain what sum, by way of present payment, each is to contribute to the fund, so that it may discharge £1200 the first year, £1000 the second, £800 the third, and so on. In order to discharge

£	£	£	s.	d.
1200, at the end of the first year, the society must be provided with	1200, discounted at 3 per cent., for one year,	1165	1	0
1000, at the end of 2d year,	1000, ditto, for 2 years,	942	12	9
800, at the end of 3d year,	800, ditto, for 3 years,	733	9	6
700, at the end of 4th year,	700, ditto, for 4 years,	621	16	7
500, at the end of 5th year,	500, ditto, for 5 years,	431	6	0
300, at the end of 6th year,	300, ditto, for 6 years,	248	5	0
And in order to discharge the remaining L.100 at the end of the seventh year, with L.100, discounted at 3 per cent., for seven years,		61	6	2
In all,		£4225	10	8

This, divided by 46, gives £91, 17s. 2d. as the sum (technically called *premium*) which each person would need to pay in at the foundation of the society. And this sum of £91, 17s. 2d. is the present value of a *reversion* of £100, at the age of 90, according to the Northampton Tables, and taking interest at 3 per cent.

Supposing such a society to be constituted, and £4225, 10s. 8d. to be paid in by the 46 members, we shall see how its business would proceed until, at the close of seven years, death put a period to the account:—

The original contribution of L.4225, 10s. 8d. being put out to interest, at the end of the first year amounts to,	£4353	5	2
From which deduct for the twelve lives which fall in the course of the year,	1200	0	0
Fund remaining at the commencement of the second year,	3153	5	2
Which, bearing one year's interest, will amount to,	£3246	16	8
From which deduct for the ten lives which fall in the course of the year,	1000	0	0
Fund remaining at the commencement of the third year,	2246	16	8
Which, bearing one year's interest, will amount to,	£2314	8	2
From which deduct for claims,	800	0	0
Fund remaining at the commencement of the fourth year,	1514	8	2
Which, bearing one year's interest, will amount to,	£1559	16	8
From which deduct for claims,	700	0	0
Fund remaining at the commencement of the fifth year,	859	16	8
Which, bearing one year's interest, will amount to,	£885	10	5
From which deduct for claims,	500	0	0
Fund remaining at the commencement of the sixth year,	385	10	5
Which, bearing one year's interest, will amount to,	£397	1	8
From which deduct for claims,	300	0	0
Fund remaining at the commencement of the seventh year,	97	1	8
Which, bearing interest, will amount to,	£100	0	0
Which will exactly discharge the last remaining claim,	100	0	0

Practically, life-assurance is not effected upon lives so advanced as 90 years. It is common to confine business to ages under 60; and the great bulk of insurers are between 27 and 40, the time about which men in this country begin to feel the responsibilities of a family. But the calculations followed for the various ages are formed exactly in the above mode. All the persons of a particular age in a life-assurance society are considered as a distinct group insuring each other. Of those, for instance, at 50 years of age, it is calculated what proportion will die the first year, what the second, and so on; and from each the society looks for such a contribution, present or prospective, as may make up an aggregate sufficient, with the accumulation from compound interest, to pay the sum assured upon each life in that group. It is quite the same thing to the society, or, we shall say, to the general interest, whether the individual insurers pay the whole required contribution at once, or in a series of annual payments, which, as the plan convenient for the majority of people, is that generally adopted.

FORMATION OF RATES.

According to the principles of which we have given a slight outline, offices form scales of rates at which

they profess to do business. In these rates very considerable discrepancy exists, for many continue to calculate mortality according to the Northampton Tables, which, as already shown, give the decrement of life too high; while others proceed upon those more recently formed, which are certainly much nearer the truth; and some, again, assume interest at only three or three and a-half per cent., while others deem four not too high. There is also an allowance for the expenses of business to be added to the naked sums required by a regard to mortality and interest, and here also the minds of parties may differ, some allowing more and some less on this account.

In most cases the charges for life-assurance are considerably within the verge of safety. Hence companies generally divide good profits, and societies realise large surplusages, which fall to be divided among the insurers, in the form of additions to the sums stated in their policies. The scales of the various offices may be classed in three grades or sets, of each of which we shall give a few examples, endeavouring, at the same time, to show how each particular grade of charges operates in the realisation of profits and surplusages.

Scales of the first or lowest grade are followed as yet by comparatively few offices; but the number is increasing. We presume that they proceed upon modern tables of mortality, and the expectation of 4 per cent. at an average, as, with regard to one of the following (the Scottish Provident), we have been informed that it follows the government table of males, and calculates upon money being improvable at the above-mentioned rate, adding from 10 to 15 per cent., according to age, for expenses of management, and as a guarantee against any unfavourable fluctuations of mortality and interest. We here, as elsewhere, limit ourselves to offices of undoubted probity:—

	20	25	30	35	40	45	50	55	Total Premiums between 20 and 60.
Aberdeen Assurance Company,	L.1 14 7	L.1 18 1	L.2 2 6	L.2 7 3	L.2 14 5	L.3 4 6	L.3 19 8	L.4 19 0	L.139 7 9
Standard L. Assurance Company, Edin.,	1 12 10	1 17 6	2 2 11	2 9 1	2 17 2	3 6 5	3 19 8	5 0 0	
Scottish Provident Institution (mutual),	1 15 8	1 18 0	2 1 6	2 6 10	2 14 9	3 5 9	4 1 7	5 1 11	131 6 8

The high premiums borne by the stocks of the two above companies, form a tolerably fair evidence (notwithstanding their having also higher scales) that business can be profitably transacted at these rates. It may likewise be mentioned that the Edinburgh Life-Assurance Company, which presents a scale nearly the same in aggregate amount as the above (£133, 4s.), divides 6 per cent. upon its stock, the £10 shares of which stand at £14, 10s. in the market. The Scottish Provident was established in 1837: it has done a large amount of business, and its experience as yet tends to show that the rates are considerably within the verge of safety. The following is a selection of respectable offices in which somewhat higher rates are charged:—

	20	25	30	35	40	45	50	55	Total Premiums between 20 and 60.
Economic Company, London,	L.1 14 7	L.1 19 0	L.2 4 3	L.2 10 11	L.2 19 9	L.3 11 9	L.4 8 0	L.5 10 3	L.141 12 6
Norwich Union Society,	1 19 6	2 3 8	2 8 10	2 14 10	3 2 0	3 11 0	4 6 0	5 5 3	142 10 4
Guardian (mixed),	2 1 0	2 5 4	2 10 7	2 17 0	3 5 0	3 14 11	4 3 0	5 4 8	146 3 3
Scot. Widows' Fund; Scot. Equit. Societies,	2 1 6	2 5 10	2 11 1	2 17 6	3 5 6	3 15 6	4 3 4	5 4 2	146 12 5

The Economic is a proprietary office, giving three-fourths of the surplusages or profits to the assured. It was established in 1823. In 1834 a bonus, amounting to 16 per cent. on the premiums paid, was declared; and in 1839 there was a second bonus, amounting to 31 per cent. on the premiums paid during the preceding five years. The Norwich Union, in 1816, gave a bonus of 20 per cent. on the amount of premiums deposited by the members insured previous to June 1815; a second bonus of 24 per cent. in 1823; and a third of 25 per cent. in 1830. The Guardian is a proprietary office, in which a proportion of profits not stated is given to the assured. Established in 1821, its first division of profits was made in 1828, and a second in 1835. At each period, the bonuses averaged rather more than 28 per cent. on the amount of the premiums paid thereon during the preceding seven years. The Scottish Widows' Fund and Scottish Equitable have both declared large surplusages. At the division of the first of these highly prosperous societies in 1825, the policies opened between 1815 (the commencement of the society) and 1820, were declared entitled to 2 per cent. for each year of their currency. In 1832 the same policies received a further addition of 3½ per cent.; and at the same time those opened between 1820 and that time, were declared entitled to additions amounting to 1½ per cent. per annum. In 1839 a retrospective bonus of 2 per cent. per annum was declared on all policies. The effect of these additions is, that policies for £1000, opened before 1820, at whatever age, amounted in 1845 to £1809, 8s. 7d. In 1841 the Scottish Equitable made its first division of surplusages, amounting to 2 per cent. per annum on all policies of above five years' standing; so that the heirs of a person who insured £1000 in 1831 (the first year of the society), would, in the event of his decease in 1850, realise £1429; and so on in proportion.

A third class of offices, adopting, like the preceding, the Northampton Tables, and generally of old standing, and acting upon old calculations, present higher scales of rates, of which we shall give a few examples:—

	20	25	30	35	40	45	50	55	Total Premiums between 20 and 60.
Globe Company,	L.2 3 7	L.2 8 1	L.2 13 5	L.2 19 10	L.3 7 11	L.3 17 11	L.4 10 8	L.5 6 4	L.151 5 2
Sun Company (mixed),	1 16 11	2 2 6	2 9 2	2 16 8	3 6 6	3 17 9	4 14 2	5 19 11	154 16 6
Amicable Society (London),	2 8 6	2 5 6	2 10 6	2 17 0	3 5 0	3 16 6	4 16 6	5 13 0	155 3 6

There are a few offices which charge still higher rates. The aggregate premiums of the London Assurance and National (mixed offices), are respectively £157, 0s. 9d., and £158, 3s. The London Life (mutual) is the highest, the aggregate of the scale being £171, 18s.

It is clear that, if business can be transacted by a company at a profit on a scale of rates amounting in the aggregate to £129, 7s. 9d. (as in the case of the Aberdeen Company), the last set of rates ought to give companies very large profits, and societies equally considerable additions to policies. The scale of the Globe is also that of the Rock and Atlas, proprietary offices granting a share of profits to the assured. In the Rock, where three-fourths of the profits are divided, policies opened in 1806 for £1000, at whatever age, were in 1842 £2001, 11s. In the Atlas, which has not announced to the public the share of profits extended to the assured, policies for £1000, opened in 1816, ranged in 1837 from £1338 to £1789, according to age.

The high rates are defended on various grounds. A company making high charges, and consequently good profits, may be supposed to have more stability than one making moderate charges; while, of a society pursuing business on the same plan, it may be said that the overplus becomes a kind of bank deposit, to be ultimately realised by the depositor. With regard to companies, the defence may or may not be sound, according as business is managed discreetly or otherwise—and there certainly are offices of that nature, entitled to the most implicit confidence, although they present moderate scales. The defence is of greater force with regard to societies; but even there it is not free from objections. The high-rate societies, proceeding upon the Northampton Tables, commit a constant injustice to young and middle-aged members in favour of the old. The needless amplitude of their funds tends to occasion a less careful use of them in conducting the concern: there is, for instance, a greater temptation to give large commission to persons, who, as it is said, bring business; a practice in no respect different in morality from that of butchers and grocers who bribe cooks and butlers to favour them with their masters' custom. But the greatest objection to a needlessly high scale is, that it must act as an obstruction to the first step in what is generally one of the most important moral acts of a lifetime—the effecting of a life-assurance. We would here be understood to draw a broad distinction between an unsound low rate and one which is sufficient to satisfy a reasonable anxiety for security. Rates much below the first of the above three scales would be decidedly unsafe, taking all likely contingencies into account. On the other hand, it ought certainly to be possible to transact perfectly safe business upon a medium of that scale. Those who, for further caution, prefer the next scale, must be said to pay highly for it, if they resort to a company which gives no share of profits to the assured: if they become members of a society, large periodic additions to policies will be no more than their due.

In order to convey still more distinct notions respecting rates of life-assurance, we subjoin a scale of those which are required, exclusive of expense for management, upon the Carlisle Tables, taking money variously at 4 and 3½ per cent.:—

	25	30	35	40	45	50	55
4 per cent.,	L.1 10 4	L.1 15 1	L.2 0 5	L.2 7 6	L.2 15 6	L.3 7 3	L.4 5 8
3½ per cent.,	1 12 1	1 16 11	2 2 5	2 9 7	2 17 10	3 9 9	4 8 2

The rates actually charged by the offices which we have cited, may easily be compared with these. It will be found that the additions made for management and the security of the concern, even to the 3½ per cent. rate, are very considerable. The aggregate of the above ages at 3½ per cent. is £18, 16s. 9d.; that of the same ages by the actual rate of the Aberdeen Company is £21, 4s. 11d., or nearly 12¾ per cent. higher; that of the same ages by the Scottish Widows' Fund is £24, 7s. 11d., or 29¼ per cent. higher; while that of the London Amicable is £25, 11s., or above 35¼ per cent. higher.

MORAL DUTY OF LIFE-ASSURANCE.

On this subject we add some remarks from a paper in 'Chambers's Edinburgh Journal,' No. 373, First Series. They are conveyed in language which is apt to appear unmeasured to one who has not given the subject much consideration—but, we believe, *only to him*.

'Such being the equitable and beneficial principles on which mutual-assurance societies are established, it is clear that they present, to men in the enjoyment of income, but possessing little property, a most suitable and favourable means of providing, in a greater or less measure, for the endeared and helpless relatives who may survive them. That only about 30,000 persons in the United Kingdom [written in 1839] should have taken advantage of life-assurance, being but 1 in 62 of the supposed number of heads of families, surely affords a striking view of—shall we call it the improvidence of mankind, or shall we not rather designate it as their culpable selfishness? For what is the predicament of that man who, for the gratification of his affections, surrounds himself with a wife and children, and peaceably lives in the enjoyment of these valued blessings, with the knowledge that, ere three moments at any time shall have passed, the cessation of his existence may throw wife and children together into a state of destitution? When the case is fully reflected upon, it must certainly appear as one of gross selfishness, notwithstanding that the world has not been accustomed to regard it in that light. It is unquestionably the duty of every man to provide, while he yet lives, for his own: we would say that it is not more his duty to provide for their daily bread during his life, than it is to provide, as far as he can, against their being left penniless in the event of his death. Indeed between these two duties there is no essential distinction, for life-assurance makes the one as much a matter of current expenditure as the other. One part of his income can be devoted by a head of a family to the necessities of the present; another may be stored up, by means of life-assurance, to provide against the future. And thus he may be said to do the whole of his duty towards his family, instead of, as is generally the case, only doing the half of it.

It may be felt by many that, admitting this duty in full, income is nevertheless insufficient to enable them to spare even the small sum necessary as an annual premium for life-assurance. The necessities of the present are in their case so great, that they do not see how they can afford it. We believe there can be no obstacle which is apt to appear more real than this, where an income is at all limited; and yet it is easy to show that no obstacle could be more ideal. It will readily be acknowledged by everybody who has an income at all, that there must be some who have smaller incomes. Say, for instance, that any man has £400 per annum: he cannot doubt that there are some who have only £350. Now, if these persons live on £350, why may not he do so too, sparing the odd £50 as a deposit for life-assurance? In like manner, he who has £200 may live as men do who have only £175, and devote the remaining £25 to have a sum assured upon his life: and so on. It may require an effort to accomplish this; but is not the object worthy of an effort? And can any man be held as honest, or any way good, who will not make such an effort, rather than be always liable to the risk of leaving in beggary the beings whom he most cherishes on earth, and for whose support he alone is responsible?'

For a further account of modes of life-assurance, the reader is referred to the following number on THE SOCIAL ECONOMICS OF THE INDUSTRIOUS ORDERS.

SOCIAL ECONOMICS OF THE INDUSTRIOUS ORDERS.

It is surely a deplorable feature in the condition of a large portion of the working-classes in this country, that they have little or no provision made against the necessities which arise to themselves or their families in the event of sickness, a failure of employment, or death. With some this is not the case, but it is the case with many; and the result is, that these persons have never more than a thin partition separating them from the realms of want and dependence. The effect which this is calculated to have need not be largely insisted on, for want and dependence are universally allowed to be productive of many evils. What is there to be expected from the moral nature of one who is every now and then obliged, perhaps, to ask for gratuitous medicine and medical attendance—to take bread from a parish officer or the managers of a charitable subscription—to trust to the pity of neighbours whenever anything like an exigency arises in his family—in short, is, for the supply of a great part of his needs, a stipendiary upon his fellow-creatures? These things are evidently irreconcilable with true manly dignity, with political independence, and with an upright bearing in any of the relations of life. The destitution of such individuals is commiserated when it arises—every humane person, who is himself above want, feels bound to contribute to its relief; the claim from suffering man to him who suffers in the smallest degree less, is irresistible. But while it is allowed that the need, when it does exist, must and ought to be relieved, all must likewise see that, in the effort to diminish one immediate and clamant evil, another of a serious nature is introduced. The working-man is morally deteriorated by ceasing to be self-dependent. Better, clearly, that this portion of the community were to place themselves, by efforts of their own, above all need for such degrading aid.

'But then the working-classes realise such small gains, that they can spare nothing for this purpose.' This may be said; but it is at the best only partially true. A great portion of the working-classes do most unquestionably, in ordinary times, realise enough to enable them to spare a little by way of provision for the future. Since many, most creditably to themselves, make such a provision, it may fairly be presumed that others, having the same wages, could do so also if they were willing. We may still more confidently presume that when some with comparatively small wages are able to save, those who are better off could save also. Now it often happens that the labourers of least skill, and who are least liberally remunerated, contribute as largely to savings' banks as their better-paid brethren. Where this is the case, and the circumstances of the men are otherwise equal, we cannot doubt that the latter class make a less economical disposal of their income. Clearly, they have only to imitate the frugal conduct of the small-wage class, in order to have ample means for making the provisions in question. On this subject, from various causes, many erroneous notions prevail. When practical men are consulted, we hear of an afflicting number of instances in which the higher-waged workmen are considered as securing little if any more comfort to their families than the other class, and perhaps not so much. We have heard masters of works declare that their men at 25s. a week did not, as a class, maintain their households, or educate their children, so well as those who had little more than half the sum. In a return from the Savings' Bank of Dundee, it appeared that, while there was £1189 deposited by 108 male weavers, a class whose wages average 8s. weekly, and £425 by 36 hecklers, a class whose average wages are 12s., there was only £637 from 56 mechanics, men whose wages range from 18s. to 36s. Such facts—and we believe many of the like nature might be readily adduced—seem to prove that the working-classes have much more in their power for the promotion of their physical and moral wellbeing than is generally supposed. Admitting fully that many are ground to the dust by poverty, we cannot doubt that a far larger proportion have all but the will to take the proper means for preserving their social independence.

We do not profess here to inquire into the primary causes of the unendowed condition of the working-classes; but we can readily see various immediate ones—as intemperance, and bad management of resources. The tavern bill of the whole operative class in the United Kingdom must be an enormous one. Of above thirty-one millions of gallons of spirits prepared in one recent year, and for which twenty millions of pounds sterling would be received, we cannot assume less than two-thirds to have been consumed by the working-classes. These classes probably expend in this way three times the whole cost of the religious establishment of the country. In Glasgow, there was lately a tavern or spirit-shop for every 14 families; and it was calculated that not fewer than 30,000 of the inhabitants go to bed drunk every Saturday night. In the parish of St David's in Dundee, while there were but 11 bakers' shops, there were 108 for the sale of liquors. In the parish of Lochwinnoch in Renfrewshire, three or four times more money is said to be spent in this way than is required for the support of religion and education. The value of ardent spirits consumed in the parish of Stevenston in Ayrshire, with a population of 3681, exceeded the landed rental by £3836. These are startling facts, telling, if they tell anything, that a large portion of the earnings of the working-classes is worse than thrown away. Now, though it is well, certainly, to compassionate and relieve the sufferings of all who need, we cannot but be equally sensible that it is proper to tell the plain truth, and say that for much of this suffering our countrymen have themselves to blame. There has been of late years a hollow kind of cajolery practised towards them, discreditable to all parties, and of a dangerous tendency. We dismiss this entirely, and conceive it to be both paying them a greater compliment and doing them a greater service, to tell them that the conduct of a large portion of their class is in many respects reprehensible, and to show them how it might be shaped somewhat better.

We propose, therefore, in the present sheet to treat of various arrangements or institutions which have been devised for the benefit of the industrious orders, with a view to their maintaining their independence, or avoiding some of the greater evils which beset them. One of the most conspicuously valuable is

THE SAVINGS' BANK.

Previous to the commencement of the present century, such of the humbler classes as were given to saving had no proper place of deposit for their spare funds, which they were obliged, therefore, to keep in an unfructifying hoard in their own possession, exposed to the risk of loss, or had to consign to some neighbour, who, though deemed safe, might turn out to be much the reverse. At the same time, in the want of a proper place for the deposit of spare money, those who might save, but did not, lacked one important requisite to their doing so. About the beginning of this century, it occurred to some benevolent minds that an important benefit would be conferred on these classes if there were institutions of the character of banks, but on a modest scale, in which the poor could deposit the smallest

sums they could from time to time spare, certain of being able to draw them forth when they pleased, with accumulated interest. Savings' banks—so named from their main object—were accordingly established almost simultaneously in Britain, the United States, France, and other countries. They were generally conducted by associations of benevolent persons, who gave the security of their own credit for the accumulated sums, and held forth every temptation in the way of liberal interest, courtesy, and promptitude in management, to induce the working-classes to resort to them.

For some years, this joint-stock but still private security was found to be sufficient for the purpose; but when it was understood that millions had found their way into savings' banks, it became apparent that something else was necessary in order to maintain the confidence which had at first been felt. The government was therefore induced to frame a variety of statutes (See article BANKS, No. 82) for the better regulation of savings' banks, and one in particular by which its own security was given for the safe keeping of the deposits. This was done under the guidance of the best intentions towards the industrious classes, who generally are depositors in savings' banks, and with as little interference as possible with private and local management.* A substantial benefit was at the same time conferred, by the fixing of a rate of interest somewhat above the average of what could be expected in a country under the particular circumstances of the United Kingdom with regard to capital.

By the above-mentioned acts (9 Geo. IV. chap. 92; 3 Will. IV. chap. 14; 5 and 6 Will. IV. chap. 57; and 7 and 8 Vict. chap. 83), it is directed that *all* the funds deposited in National Security Savings' Banks must be paid into the Bank of England on account of government, and that the money so invested shall bear interest at the rate of £3, 5s. per cent. per annum, *whatever may be the fluctuations in the value of the public funds during the term of investment.* Depositors are thus afforded the best of all securities—namely, that of the *whole British nation;* while the National Savings' Banks are enabled, after paying all charges upon their establishments, to give a considerably higher rate of interest than the ordinary banks, or even the greater part of private savings' banks, allow on deposits. The highest interest which the law allows the National Security Savings' Banks to pay to depositors is £3, 0s. 10d. per cent. per annum; the difference between this and the rate allowed on the money invested by them in government securities being reserved as a fund for the payment of the officials of the banks and other necessary expenses. The rate of interest which is at present paid by these banks is £2, 17s. 9½d.; and whatever remains, after defraying all charges, is allowed to accumulate as a surplus fund.

Deposits of from *one shilling* to *thirty pounds* may be received by these banks, but no individual depositor is allowed to lodge more than £30 in any one year, ending on the 20th November, nor more than £150 on the whole: when the sum amounts to £200, no interest is payable. Charitable and provident institutions may lodge funds to the amount of £100 in a single year, or £300 in all, principal and interest included; and friendly societies, whose rules have been duly certified by the acts of parliament relating thereto, are permitted to deposit the whole of their funds, whatever may be their amount. Compound interest is given on the sums lodged, the interest being added to the principal at the end of each year in some banks, and the end of each half-year in others, and interest afterwards allowed on the whole. Any depositor may receive, on demand, the money lodged by him, if it do not amount to a considerable sum; and even in that case it will be returned on a few days' notice.

The wisest and most effectual provisions are made for insuring the proper management of the affairs of these banks. Each must have a certain number of trustees and managers, whose services are performed gratuitously; then a treasurer, actuary, cashier, clerks, &c.—all of whom must give security, by bond, to such amount as the directors of the establishment may judge sufficient. No portion of the funds invested in government security can be withdrawn, except on the authority of an order signed by several of the trustees and managers. Detailed reports of the transactions of each bank must be periodically forwarded to the Commissioners for the Reduction of the National Debt, and also exhibited to the depositors at the bank office. Of course government can only be responsible for the amount actually deposited in the Bank of England; but the respectability of the local managers is sufficient guarantee for the safety of the funds in their passage between the depositor and the national exchequer. To remove from the public mind all doubt as to security, and to render the system of savings' banks still more efficient, we understand that it is the intention of the legislature shortly to sanction a new set of regulations, chiefly affecting the local management and direction.

Under both the old and new systems, savings' banks have been highly successful in their object, and the money deposited in them reaches an amount which no one who regarded the habits of the working-classes thirty-five years ago could have anticipated. In 1840, the total sum was nearly £22,000,000; in 1844, upwards of £29,000,000; and at present, upwards of £32,000,000. In 1845, the number of depositors in England was 846,445; in Wales, 18,231; in Scotland, 81,170; and in Ireland, 95,348—making in all, 1,041,194. The amount of investments for the same year was £24,238,748 for England; £531,902 for Wales; £1,185,545 for Scotland; and £2,858,260 for Ireland—making in all about twenty-nine millions. But this sum, large as it is, does not embrace the whole amount of business transacted by savings' banks. During the same year there were in England belonging to charitable societies, 10,171 deposits, amounting to £539,627; and to friendly societies, 8773 deposits, amounting to £1,151,891: in Scotland, 635 charitable society deposits, yielding £35,891, and 398 belonging to friendly societies, yielding £57,493: in Wales, 220 deposits belonging to charitable societies, yielding £13,582, and 465 to friendly societies, amounting to £72,605: in Ireland, 669 deposits belonging to charitable societies, worth £41,798, and 405 to friendly societies, equal £21,523. In other words, the amount deposited by individuals and charitable and friendly societies in National Security Savings' Banks at the end of the year ending 20th November 1845, was £32,661,924—a vast amount certainly to be made up of such small and heterogeneous savings. The following table exhibits at a glance the elements of the investment:—

Depositors.	Number of Depositors.	Amount of Investments.
Not exceeding £30,	597,631	£3,851,027
... ... 50,	267,609	8,247,304
... ... 100,	113,727	7,815,347
... ... 150,	37,924	4,563,790
... ... 200,	21,352	3,633,971
Exceeding..... 200,	3,001	702,980
Individual Depositors,	1,041,194	28,814,455
Charitable Societies,	11,695	630,508
Friendly Societies,	10,041	1,303,515
Number of Accounts,	1,062,930	30,748,458
Friendly Societies in direct account with Commissioners for reduction of National Debt,	488	1,913,466
Gross Total,	1,063,418	32,661,924

* Various rules are appointed by the legislature for the formation and management of savings' banks. An association of persons desirous of forming one in any place are enjoined first to frame a set of regulations for the management, and to submit these to the approval of a barrister appointed by government, without whose certificate they cannot enjoy a legal status, or any of the advantages which the legislature has thought proper to hold out for the encouragement of such institutions.

The *kind of persons who deposit*—that is, their status as to employment, amount of wages, locality, age, sex, and so forth—is an important point; and here, we fear, some disappointment must be felt. We have already seen that the average amount of deposits at Dundee is little larger amongst workmen of high than amongst workmen of low wages. In that town, out of 464 male weavers in the parish of St David's, with wages averaging 8s., 108 were depositors, or 1 in 4½; of 181 flax-dressers, with wages averaging 12s., 36 were depositors, or 1 in 5; of 200 mechanics with 20s. of average wages, 56 were depositors, or 1 in 3½. The very small degree in which we thus see comparatively good wages favouring the saving principle, is surprising and lamentable. Another fact of a general character is not less striking. In many places, of the depositors in savings' banks, a majority are females. Female servants, in almost all places, form a conspicuous section. In the Dundee Savings' Bank, there were, some years ago, 237 accounts in the names of female servants (aggregate deposits, £2235), while (and this is equally remarkable) out of the numerous class of factory female workers, only *one* had an account. It has also been stated, that 'a few years ago, in Perth, it was found, from its savings' bank, that the women of the "Fair City" were laying up for the men, not the men for the women; that the young mechanics had forgot there were such things as want, or sickness, or age.' In the Edinburgh Savings' Bank, of the total number of accounts existing at November 1841, the majority were by females, and generally by females isolated in society, and depending on their own exertions, as appears from the statements given in the adjacent column, in which the amount of balances and the average amount of each person's balance are also shown. In the county of Fife, which is well balanced as to factories, mines, and agriculture, the chief depositors are found to be female servants, handloom weavers, and cottars—not the miners, mechanics, or factory workers, who have the highest wages.

In Glasgow the male depositors formed a majority; but here the factory operatives were comparatively a small section, numbering only 1282, while mechanics and artificers were 6774, notwithstanding the vast number of persons employed in factories in that city. The female domestics who deposited in the Glasgow Savings' Bank were 3862, and their aggregate accumulations, £22,378. With regard to this portion of the community, an interesting fact is mentioned in the report of the Edinburgh Savings' Bank for 1841. The five hundred accounts last opened by female servants in that bank, presented the aggregate sum of £2313, 2s. 7d.; but the first five hundred opened by the same class, four or five years before, showed a total of no less than £111,921, 10s. 4d. We here see, in a striking manner, how a little fund once begun by a person in humble circumstances, tends to accumulate in the course of a few years.

Females.	No.	Amount of Balances. £ s. d.	Average Amount. £ s. d.
Domestic servants,	3,775	45,790 15 11	12 2 7
Single women without designation—generally persons keeping house for a father or other relative, and having no other occupation,	1,804	31,540 15 11	17 9 7
Married women without designation—generally the wives of operatives,	1,438	21,986 8 5	15 5 0
Minors,	396	2,515 10 0	6 10 2
Dressmakers, milliners, sewers,	353	3,725 1 6	10 11 7
Widows, designated simply as such,	141	2,413 5 1	17 2 9
Shopkeepers, lodging-keepers, householders,	164	2,398 10 4	14 11 9
Female operatives, mill-workers, washers,	95	1,112 1 11	11 14 1
Governesses and female teachers,	66	1,272 19 10	19 5 5
Miscellaneous designations,	28	465 5 9	16 12 1
Balances not exceeding 2s. each,	2,601	123 1 8	0 0 11
Accounts in the names of females,	10,850	113,338 16 4	

Males.	No.	Amount of Balances. £ s. d.	Average Amount. £ s. d.
Mechanics and operatives of all kinds,	2,138	31,889 9 7	14 18 4
Porters, chairmen, gardeners, and town and country labourers,	557	8,566 0 11	15 7 7
Teachers, students, clerks, shopmen,	536	9,371 10 8	17 10 8
Domestic servants, including public coachmen, waiters, and grooms,	534	12,534 7 5	23 9 5
Shopkeepers,	339	5,587 17 8	16 9 7
Soldiers and sailors,	197	3,855 16 11	19 11 4
Public servants—as post-office, police, excise, &c.,	87	1,261 3 10	14 9 10
Minors,	597	3,797 10 11	6 7 2
Miscellaneous designations,	188	3,722 14 1	20 6 9
No designation,	357	5,721 14 2	16 0 6
Balances not exceeding 2s. each,	1,686	112 0 0	0 0 10
Accounts in the names of males,	8,111	86,420 5 9	
Total in the names of females, as above,	10,850	113,338 16 4	
Societies,	169	21,800 14 7	
Total accounts in operation at 20th November 1841,	19,130	221,559 16 8	

It may be of service to many persons in the humbler walks of life, who are not much acquainted with business, to see an example of a savings' bank account: the following is one presumed to be formed by a man named John Smith, whose signature accordingly appears in the last column, as acknowledging the sums which he has withdrawn:—

SAVINGS' BANK in Account with _____

No. _____

Date.	Deposited and Withdrawn.	£	s.	d.	Manager's Signature.
1836.					
July 10,	Received Six Shillings,	0	6	0	George Rose.
August 12,	Received Nine Shillings,	0	9	0	J. T. Beecher.
	Interest to November 20,	0	0	1	
		0	15	1½	
November 23,	Paid Five Shillings and Three-Halfpence,	0	5	1½	John Smith.
		0	10	0	
December 20,	Received Thirty-five Shillings,	1	15	0	George Rose.
1837.					
June 19,	Received Three Pounds,	3	0	0	J. T. Beecher.
	Interest to November 20,	0	2	2½	
		5	7	2½	
December 1,	Paid Five Pounds, Seven Shillings, and Twopence-Halfpenny,	5	7	2½	John Smith.

It is of still greater importance that a person who thinks of depositing should have a distinct idea of the benefit he is to derive in the way of interest. The interest at present [1849] given in savings' banks is at the rate of £2, 17s. 9½d. per cent.; the difference between this and £3, 5s., which the Commissioners of the National Debt allow, being, as already mentioned, reserved to pay expenses, &c. This being the interest allowed, any one may readily reckon how his money is to fructify, by supposing an addition of *one-thirty-fourth* being made to it at the end of every year. For instance, if he deposits 15s., and lets it lie for a year, he is then entitled to 15s. 5d. It is right that he should be fully aware that, in respect of interest, he is better off than the people of the middle and upper ranks who deposit in common banks; for not only does he get a higher per-centage than is generally given by these banks, but he has the advantage of *compound interest;* that is to say, the interest due to him at the end of a year is silently, and without any trouble on his part, added to and considered as a part of the principal, on which interest is to be given in future. Thus a common bank account and a savings' bank account, for the same sum, if left unattended to for a few years, would in the end come to a very different amount. In order that no one may be at a loss to calculate the interest he is to receive on a savings'-bank deposit, we present the annexed table, which shows simple interest for a year on a variety of sums:—

INTEREST TABLE, AT £3, 17s. 9½d. PER CENT.

Principal.	Month of 30 Days.	Year.	Principal.	Month of 30 Days.	Year.
£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
0 15 0	0 0 0½	0 0 5	20 5 0	0 0 11½	0 11 8½
1 10 0	0 0 0¾	0 0 10½	25 10 0	0 1 2¾	0 14 8¾
2 5 0	0 0 1	0 1 3½	30 15 0	0 1 5¼	0 17 9
3 0 0	0 0 1½	0 1 8¾	36 0 0	0 1 8¾	1 0 9½
3 15 0	0 0 2	0 2 2	41 5 0	0 1 11½	1 3 10
4 10 0	0 0 2¼	0 2 7	46 10 0	0 2 2½	1 6 10½
5 5 0	0 0 2¾	0 3 0½	51 15 0	0 2 5¼	1 9 10¾
6 0 0	0 0 3½	0 3 5¾	57 0 0	0 2 8¼	1 12 11
6 15 0	0 0 3¾	0 3 10¾	62 5 0	0 2 11¼	1 15 11½
7 10 0	0 0 4	0 4 4	67 10 0	0 3 2¾	1 19 0
8 5 0	0 0 4½	0 4 9	72 15 0	0 3 5¼	2 2 0½
9 0 0	0 0 5	0 5 2½	78 0 0	0 3 8¼	2 5 0¾
9 15 0	0 0 5½	0 5 7½	83 5 0	0 3 11¼	2 8 1¼
10 0 0	0 0 5¾	0 5 9½	88 10 0	0 4 2¼	2 11 1½
10 10 0	0 0 [illegible]	0 6 0¾	93 15 0	0 4 5¼	2 14 2
11 5 0	0 0 [illegible]	0 6 6	99 0 0	0 4 8¼	2 17 2½
12 0 0	0 0 6¾	0 6 11	100 0 0	0 4 9	2 17 9½
12 15 0	0 0 7	0 7 4½	104 5 0	0 4 11½	3 0 2¾
13 10 0	0 0 7½	0 7 9½	109 10 0	0 5 2½	3 3 3½
14 5 0	0 0 8	0 8 2¾	114 15 0	0 5 5¼	3 6 3½
15 0 0	0 0 8½	0 8 8	120 0 0	0 5 8¼	3 9 4
15 15 0	0 0 8¾	0 9 1	125 5 0	0 5 11¼	3 12 4½
16 10 0	0 0 9¼	0 9 6½	130 10 0	0 6 2½	3 15 4¾
17 5 0	0 0 9½	0 9 11¾	135 15 0	0 6 5¼	3 18 5¼
18 0 0	0 0 10	0 10 4¾	141 0 0	0 6 8¼	4 11 8¾
18 15 0	0 0 10½	0 10 10	146 5 0	0 6 11¼	4 4 6
19 10 0	0 0 11	0 11 3	150 0 0	0 7 1½	4 6 8

The following table was formed to show what a certain weekly contribution paid into the Windsor and Eton Savings' Bank would amount to in a certain term of years, interest being at £3, 8s. 5d. per cent. It is a highly-instructive table, well worthy of being carefully studied by every individual of the industrious orders:—

	One Shilling per Week.	One Shilling and Sixpence per Week.	Two Shillings per Week.	Three Shillings per Week.	Four Shillings per Week.	Five Shillings per Week.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1 Year,	2 12 7½	3 19 0	5 5 4½	7 18 3½	10 11 1½	13 3 10
2 ...	5 6 11	8 0 6	10 14 4	16 1 10	21 9 5	26 16 6
3 ...	8 3 1	12 4 11	16 6 10½	24 10 11½	32 15 0½	40 18 7
4 ...	11 1 1½	16 12 3	22 3 3	33 5 11	44 8 6	55 10 3
5 ...	14 1 3	21 2 5	28 3 7½	42 6 10½	56 9 9½	70 12 0½
6 ...	17 3 4½	25 15 9	34 8 1	51 14 0	68 19 4½	86 4 1
7 ...	20 7 7	30 12 4	40 16 7½	61 7 6	81 17 5	102 6 8
8 ...	23 14 2½	35 12 2	47 9 10	71 7 7½	95 4 4½	119 0 5
9 ...	27 2 10	40 15 5	54 7 5½	81 14 7½	109 0 5½	136 5 7½
10 ...	30 13 10½	46 2 3	61 9 10½	92 8 7	122 6 1½	154 2 7½
11 ...	34 7 4	51 12 8	68 17 1	103 9 11	138 1 6	
12 ...	38 3 3½	57 6 10½	76 9 4½	114 18 9½		
13 ...	42 1 10	63 5 0	84 6 10½	126 15 6		
14 ...	46 3 1½	69 7 2	92 9 9	139 0 5½		
15 ...	50 7 2	75 13 5½	100 18 2	151 13 9½		
16 ...	54 14 2	82 4 1	109 12 5½			
17 ...	59 4 0	88 19 1	118 12 8½			
18 ...	63 16 11½	95 18 8	127 19 1			
19 ...	68 13 1	103 3 1½	137 11 9½			
20 ...	73 12 5½	110 12 6½	147 11 2			

A prejudice exists in the minds of many working-people, and is perhaps affected by others, against savings' banks, on the ground that, when a man is known to save, he is the more liable to have his wages reduced by his master, or to want work when there is anything like a general failure of employment. Surely there can be little foundation in fact for this notion. It is a general wish amongst masters that their working-people should save, and many endeavour to bring this about by instituting savings' banks, and acting as managers. It is felt by every master, that a workman who has saved a little, is likely to be a much more steady and respectable person than one who has not. Indeed, as it has been justly observed, a receipt from a savings' bank is one of the best certificates of steadiness and sobriety which a working-man can show. Let it also be considered that, with a little capital in his possession, a workman stands in a much more independent position with regard to his master than he otherwise could do. We cannot doubt that in these considerations there is much more than a counterpoise to the visionary fear of having wages reduced, or employment withheld, in consequence of possessing a bank deposit.

It would be difficult to over-estimate the importance of a little private hoard to a working-man. It not only proves a succour in the evil day, but it tends to improve his whole moral nature. Wealth has been the subject of many bitter remarks to both the poet and the philosopher; but it is after all a greater friend to virtue than to vice. Often a very small amount of it, acquired by honest industry, will supply a modest pride that supports, if it is not in itself, moral efficacy. Doing well in this small way suggests and leads to doing well in other ways. The saver may prove the stay of a declining parent or other friend; he can do a better duty to his children; he can contribute to philanthropic objects which interest and bring out his finest feelings. It may even happen that, from less to more, and with no sacrifice of peace of mind, he is enabled by saving to rise into a higher grade in society. One of the best of the immediate effects of saving is, that once fairly begun, it proves a preservative from many extravagancies and vices. Temptations may present themselves; but the mind reverts to the fondly-regarded little hoard in the savings' bank, and they are easily resisted. Hence, it is generally observed that, once

a practice of saving has been commenced, a great revolution takes place in the character. Irregularities and improper self-indulgences disappear, and steadiness, sobriety, and reflection take their place.

These views are, we feel assured, accordant with general experience; but it may nevertheless be well to quote one testimony from a practical quarter in support of them. The following passages are from an unpretending tract, published several years ago, respecting an auxiliary to the Govan Savings' Bank, in Kerr and Company's Nailery:—

'Three years ago, nearly all the men in this work were seemingly constitutionally and hopelessly afflicted with *a spark in the throat*, and spent a very large portion of their wages on ardent spirits to quench it. As might have been expected under the circumstances, both their persons and dwellings presented standing proofs of their ruinous habits; and their employer was frequently annoyed by their suspension of labour to gratify their vitiated taste, at times when the hurried execution of orders rendered him most dependent upon them. However, by the exercise of a little kindly feeling towards them, matters began to assume a more pleasing aspect. By being regarded and spoken to in their sober intervals as rational and accountable beings, and having exhibited to them the advantages they were likely to derive from connecting themselves with the Total Abstinence Society and the Savings' Bank, one after another was cured of the long-existing malady, and not only took up a new position among his fellow-workers, as at once an advocate and an evidence of temperance and economy, but was enabled to provide himself and family with household comforts to which they had previously been strangers. With the view of cherishing such newly-formed habits, their employer afforded them the weekly opportunity of husbanding their spare earnings, by forming among them and conducting a little agency of the National Security Savings' Bank. The following summary of its transactions will show both the success of his labours, and the encouragement which the proprietors and managers of other public works are likely to enjoy in making similar efforts:—The nailery consists [written in 1842] of three shops or hearths, each accommodating four workmen. Among the twelve persons employed in these shops, and two junior members of one of their families, there are nine open accounts; the number of deposits has been 351, and the amount deposited, including interest, £61, 15s. 10d. The number of repayments has been 31, and the amount repaid £36, 11s. 9d., so that the balance due at the 20th November 1841, upon the nine open accounts, is £25, 4s. 1d., or about £2, 16s.—a small average, certainly, in comparison with that of some other trades, but presenting a pleasing contrast to the situation in which matters stood at the commencement of the agency, when scarcely one of the workmen could, on a Wednesday or Thursday, muster a sixpence of his previous week's earnings. One observation must yet be made; they are now *not only more independent and comfortable, but stand much higher in the estimation of their employers.*'

THE FRIENDLY SOCIETY.

Savings, instead of being stored up in a bank, to be there constantly at command, may be disposed by a working-man in a well-constituted friendly society, as a means of insuring for himself certain contingent and fixed benefits. Friendly societies generally embrace several objects, as the securing of a weekly sum during sickness, and a pension after a certain age. They are based on the principle of mutual insurance (see LIFE-ASSURANCE, No. 83); that is to say, members make payments, either at once or in small periodical sums, and thus constitute a fund, out of which such as happen to fall sick or to survive a certain age, are supplied, the uncertainty attached to all individual concerns being lost in the certainty which attends calculations involving great numbers. In some respects, and for some cases, joining a friendly society may be better than becoming a depositor in a savings' bank. Sickness may come before the savings are considerable; or, if considerable, they may be melted away by a long-continued sickness; but after the first weekly payment is made to a friendly society, the member is secure of succour, however long his illness may continue, besides perhaps other advantages. It is possible, on the other hand, that a difficulty may be experienced, in certain circumstances, in keeping up the weekly or other payments required to secure the benefits of friendly societies. Here, however, it may be said, there is no more than the usual uncertainty attached to all things. Assuredly, the arrangement of a rightly-constituted friendly society furnishes a very considerable degree of security against some of the uncertainties of life.

It is to be regretted, of this excellent class of institutions, that many of them are founded upon erroneous principles, or rather upon no principles at all; and it often happens, therefore, that those who trust to them are disappointed, the funds falling short before all claims are satisfied. This was at one time not to be wondered at, as no proper calculations for friendly societies existed; but such is no longer the case, for sound calculations are now attainable. Nevertheless, there is still a considerable number of obscure societies scattered throughout the country, proceeding altogether at random, and by which the industrious classes are induced to misspend large sums. We trust that what we have now to state will be of some service in promoting the establishment of sound societies, and putting an end to such as are of a different kind.

One great mistake in the formation of friendly societies is to assume that each member should pay an equal sum, whatever his age may be. This is unjust; for the younger members have a less chance of becoming burthensome to the funds than the middle-aged; and, indeed, there is a rising scale of probability of sickness throughout all the years of a man's life. The Highland Society found that, between twenty and thirty, men are liable at an average to be half a week indisposed per annum. Between thirty and forty, the average was about two-thirds of a week. At forty-six, it became a full week; at fifty-seven, two weeks; at seventy, eleven weeks. The society, from taking unsuitable grounds for their calculations, made out the probabilities of sickness too low. In the following table, three set of calculations are given, as to the proportion of sick out of one hundred at particular intervals of age:—

Ages.	Highland Society.	English Benefit Societies.	Mr Edwards' Theoretical Table.
20 to 30	1·14	1·54	1·72
30 ... 40	1·32	1·83	2·30
40 ... 50	1·97	2·56	3·10
50 ... 60	3·60	4·32	4·51

The difference in the three columns is here of little consequence. They at least agree in representing *increase of years as attended by increased liability to sickness.* Now a rightly-constituted friendly society is bound to advert to this circumstance. To admit all ages at an equal payment, is clearly making the younger members pay for the elder, who should have entered at an earlier age, and been paying all along.

Another great error in the constitution of benefit societies is in making them for a year only. Many of the old friendly societies having ended in disappointment, in consequence of want of right calculations, or bad management, or peculation of the funds, the working-classes have contracted the notion that there is more safety in a yearly term. The immediate payments are also less than in a well-constituted friendly society. *Yearly societies*, as they are called, usually originate with some individual, often the keeper of a tavern, who advertises that a society will be formed in his house on a particular day. Applicants for admission pay one shilling as entry-money, which goes into the pocket of the originator of the scheme, by way of

rent. The objects are generally threefold—namely, a fund for sickness and funeral expenses, a deposit fund, and a loan bank. Towards the first, there is perhaps a weekly payment of twopence, or more if necessary, together with the interest arising from the loan of money to the members. Towards the deposit fund, there is a payment ranging generally from sixpence to two shillings, the accumulations being received back when the society closes. The money deposited is employed in making loans to such of the members as desire such accommodation within the amount of their several entire deposits for the year, one penny per pound per month being charged by way of interest. The surplus, if any, of the twopences and interest, after sick and funeral money, books, and other necessaries are paid, is divided amongst those members who may be clear of the books at the close of the society. Some such societies are formed by a spontaneous association of persons, who prefer renting a room for their meetings, and thus escape the temptations of a tavern; but none of them avoid the errors of an equality of payments for all ages, and the yearly dissolution. The youth of fifteen, who is not liable to half a week's sickness per annum, pays as much as the man of fifty-seven, who is liable to two weeks. Should sickness befall any one towards the close of the year, he is left, when the society dissolves, quite unprovided for, because he cannot enter another society in a state of sickness. Considered as a deposit for savings, the yearly society is strikingly inferior to the savings' bank, in as far as the depositor cannot take out money without paying an exorbitant rate of interest. Finally, these societies are generally under the care of obscure persons, who can give no security for the funds placed in their hands, and who in many instances become bankrupt or abscond before the final reckoning. Yearly societies are, indeed, in every point of view, a most objectionable class of institutions, to which working people would never resort but for their ignorance and unwariness, and the temptations held out to allure them.

A well-constituted friendly society involves, in the first place, the principle of payments appropriate to particular ages, as no other plan can be considered equitable. It stands forth before the working-classes as a permanent institution, like the life-assurance societies of the middle and upper classes, and necessarily requires its members to consider the connection they form with it as an enduring one, because its grand aim is expressly to make provision at one period of life for contingencies which may arise at another—youth, in short, to endow old age. By a yearly society, a man is left at last no better than he was at first, as far as that society is concerned; but the proper friendly society contemplates his enjoying a comfortable and independent old age, from the results of his own well-bestowed earnings.

It is also essential to the character of a proper benefit society, that individuals be not admitted indiscriminately. To take in a person in bad health or of broken constitution, is unjust to those members who are healthy, because he is obviously more likely to be a speedy burthen to the funds. Here, as in life-assurance societies, it is necessary to admit members only upon a showing that they are of sound constitution and in the enjoyment of good health. And it may be well to grant no benefits until after the member has been a year in the society. By these means men are induced to enter when they are hale and well, instead of postponing the step until they have a pressing need for assistance, when their endeavour to get into a benefit society becomes little else than a fraud.

Government has thought proper to interfere with its aid in the formation of friendly societies, though not compulsorily. An association of persons forming one, has the means of ascertaining the soundness of its principles, and also entitles itself to deposit funds in savings' banks, with the government security and at not less than £3, 0s. 10d. per cent. per annum, by submitting the proposed rules to the barrister appointed to certify them, to whom a fee of a guinea is payable. Under the sanction of government, tables have been formed by a highly-competent person, John Finlaison, Esq. Actuary of the National Debt, for the guidance of friendly societies, and these are easily to be had,* so that it is quite inexcusable to proceed upon random and unauthenticated data. Before quoting any of these tables, we shall endeavour to explain how they are formed.

We have an idea of a benefit society in its simplest form, if we suppose a hundred men, of exactly 33 years of age, to associate, and make such a payment at first as may be sure to afford each man that shall fall sick during the ensuing year one shilling a day during the term of his sickness. Taking (for the sake of illustration) the Scottish Tables, we find that, amongst such a body of men, there will be about 66 weeks of illness in the course of the year. This, multiplied by 7, gives the whole sum required, £25, 2s., or a little more than 4s. 8d. each, which, less by a small sum for interest, will accordingly be the entry-money of each man. A society of individuals of different ages, each paying the sum which would in like manner be found proper to his age, would be quite as sound in principle as one on the above simple scheme. It is only a step further to equalise each man's annual payments over the whole period during which he undertakes to be a paying member.

We shall suppose that the superannuation allowance or pension is contemplated as commencing at 60 years of age. It is necessary to consult tables of mortality, in order to ascertain how many may be expected to reach that age, and how long each of these has a chance of surviving it. Having already treated of tables of mortality (see the article on LIFE-ASSURANCE, No. 83), we shall not say much on this subject. The table presented by the Highland Society, as proper for friendly societies, is a mean of the Northampton, Carlisle, and Swedish Tables, and may be regarded as tolerably safe for both life-assurance and annuity schemes. It shows that, of 1005 persons of 21 years of age, no fewer than 528 reach the age of 60, 336 that of 70, and 127 that of 80; thus making it evident *how absurd it is for a working-man to think that he has an extremely small chance of growing old, so as to need a provision.*

Another point for consideration is the rate at which the funds of the society may be improved. In most cases, we believe, it is best for such societies to rest content with taking advantage of the privilege which they enjoy by act of parliament, of depositing their money in the funds or the savings' banks, in which case they are sure to obtain for it interest at a rate of not less than £3, 0s. 10d. per cent. per annum.

Proceeding upon these or nearly similar grounds of calculation, Mr Finlaison formed the table which is given at the top of the next page, to show in one sum (and also in an equivalent monthly contribution, to cease at the age of 65) the value of an allowance of four shillings per week during sickness, from and after each age until 65; combined with an allowance or pension of two shillings per week, commencing payment at the age of 65; and further combined with a payment of four pounds whenever the death of the purchaser should happen:—

We would here call particular attention to a point of view in which savings' banks and friendly societies might be regarded as favourable to each other. It will be observed that, for the sum of about thirteen pounds, at the age of thirty-four, a man can insure himself against absolute want under all future contingencies except deficient employment. Now, at that age, a prudent and careful man, who has begun early to frequent the savings' bank, may without difficulty have saved thirteen pounds. Let him draw his thirteen pounds from the savings' bank, and place it with the friendly society, and he is all but an independent man for life. This is a course highly worthy of the attention of

* See 'Instructions for the Establishment of Friendly Societies.' Printed by W. Clowes and Sons, London, for her Majesty's Stationery Office. 1835.

Age of the Purchaser.	Total value in ready Money of the three Benefits.	Equivalent Monthly Contribution ceasing at the Age of 65.	Age of the Purchaser.	Total value in ready Money of the three Benefits.	Equivalent Monthly Contribution ceasing at the Age of 65.	Age of the Purchaser.	Total value in ready Money of the three Benefits.	Equivalent Monthly Contribution ceasing at the Age of 65.
	£ s. d.	£ s. d.		£ s. d.	£ s. d.		£ s. d.	£ s. d.
15	8 9 1½	0 0 8½	35	13 7 2½	0 1 5½	55	25 16 9½	0 5 9½
16	8 11 8½	0 0 9	36	13 14 0½	0 1 6	56	26 19 7½	
17	8 14 6	0 0 9½	37	14 1 8½	0 1 7	57	28 4 9½	
18	8 17 6½	0 0 9½	38	14 8 11½	0 1 7½	58	29 12 6	
19	9 0 10½	0 0 9½	39	14 17 1½	0 1 8½	59	31 3 0½	
20	9 4 6	0 0 10	40	15 5 8½	0 1 10	60	32 16 10	
21	9 6 5	0 0 10½	41	15 14 4	0 1 11	61	34 10 0½	
22	9 12 7½	0 0 10½	42	16 2 4½	0 2 0½	62	36 7 1½	
23	9 17 1	0 0 11	43	16 8 11½	0 2 1½	63	38 8 8½	
24	10 1 9½	0 0 11½	44	17 5 0½	0 2 3½	64	40 15 6½	
25	10 6 8	0 0 11½	45	17 13 8½	0 2 5½	65	43 8 9½	
26	10 12 1½	0 1 0	46	18 5 0½	0 2 7	66	41 17 9½	
27	10 16 11½	0 1 0½	47	18 17 3	0 2 9½	67	40 7 9	
28	11 2 4½	0 1 1	48	19 10 2½	0 2 11½	68	38 18 7½	
29	11 7 11½	0 1 1½	49	20 4 3½	0 3 2½	69	37 10 6	
						70	36 2 5½	
30	11 13 9½	0 1 2	50	20 19 6½	0 3 5½	71	34 17 0½	
31	11 19 11	0 1 2½	51	21 15 11½	0 3 9½	72	33 10 11½	
32	12 6 3½	0 1 3½	52	22 13 8½	0 4 2	73	32 5 1½	
33	12 12 11	0 1 3½	53	23 13 0½	0 4 7	74	30 19 3½	
34	12 19 10½	0 1 4½	54	24 13 11½	0 5 1	75	29 13 8	

domestic servants, who in the latter years of life are so often exposed to want.*

The scheme of a right friendly society may be further illustrated by the actual arrangements of one of approved character, which happens to be well known to us. We allude to the Edinburgh School of Arts' Friendly Society, established about twenty years ago. This society, although originating with certain of the members of, and friends to the School of Arts (a species of mechanics' institution), and taking its name, is not otherwise connected with that institution, but is open to all persons, male and female, residing in Edinburgh. It has three separate funds or schemes—namely, a *Sickness Fund*, *Deferred Annuity Fund*, and a *Life Assurance Fund*. *One share* of the sickness fund entitles the member during sickness to 10s. a week for 52 weeks, 7s. 6d. a week for other 52 weeks, and 5s. a week for all future period of sickness until the age of 60 or 65, according to the age of superannuation fixed at entry; and thereafter his contributions cease, and he enters to the enjoyment of the *Deferred Annuity Fund*, one share of which entitles the member to an annuity of £8 a year, commencing at the age of 60 or 65, as fixed at his entry. One share of the *Life Assurance Fund* is a sum of £10 payable at the member's death. In this case, as in the others, the contributions cease at the age of 60 or 65.

The rates are calculated from the Highland Society's sickness table, increased by 50 per cent., which in this case may be considered as sufficient (seeing that only sound healthy men are admitted), and a mortality table compounded of the Northampton, Carlisle, and Swedish, assuming the rate of interest at 4 per cent. accumulated yearly; and the only charges for management are 2s. 6d. entry-money to each fund, and 1s. a year payable by each member of each fund.

The life-assurance fund of this society stands apart from the other two, and may be entered independently. Its table being the only one we are acquainted with, which presents the advantages of life-assurance to the humbler classes, we extract it. It is to be observed that females are admissible at one-sixth less charges. Half-a-crown of entry-money is charged.

I.—*Life-Assurance Fund.*

Contributions cease at 60.

Age.	Single Payment.	Annual Payment.	First Month.	Other Months.
	£ s. d.	s. d.	s. d.	s. d.
19	2 18 10	3 4	0 7	0 3
25	3 4 7½	3 11	1 2	0 3
30	3 10 6½	4 6½	0 10½	0 4
35	3 17 3	5 5½	0 10½	0 5
40	4 4 7½	6 9	1 3	0 6
45	4 13 0½	8 9	1 5	0 8
50	5 2 5	12 5½	1 5½	1 0

Contributions cease at 65.

Age.	Single Payment.	Annual Payment.	First Month.	Other Months.
	£ s. d.	s. d.	s. d.	s. d.
19	2 18 10	3 3	0 6	0 3
25	3 4 7½	3 9½	1 0½	0 3
30	3 10 6½	4 4½	0 8½	0 4
35	3 17 3	5 1½	0 6½	0 5
40	4 4 7½	6 1½	0 7½	0 6
45	4 13 0½	7 7½	1 2½	0 7
50	5 2 5	9 11	1 8	0 9

* Friendly societies and savings' banks sometimes appear as rival institutions, and their respective merits have been keenly canvassed. Both have certainly their peculiar advantages. There is much in the consciousness of having a small fund stored up, and in the power of employing it for any particular purpose at pleasure; but it cannot be doubted that a reserve fund is a less efficient protection against contingencies, such as sickness, and death itself, than connection with a sound friendly society. The difference is like that between taking one's risk of loss from fire, and paying into an insurance office. 'Whenever there is a contingency, the cheapest way of providing against it is by uniting with others, so that each man may subject himself to a small deprivation, in order that no man may be subjected to a great loss. He upon whom the contingency does not fall, does not get his money back again, nor does he get it for any visible or tangible benefit; but he obtains security against ruin, and consequent peace of mind. He upon whom the contingency does fall, gets all that those whom fortune has exempted from it have lost in hard money, and is thus enabled to sustain an event which in all probability would otherwise overwhelm him.

The individual depositor, not the contributor to a common fund, is really the speculator. If no sickness attacks him during his years of strength and activity, and he *dies* before he is past labour, he has been successful in his speculation; but if he fall sick at an early period, or if he live to old age, he is a great loser; for his savings, with their accumulations, will support him but a short time in sickness; or even if he retain something in old age, after having provided for his occasional illness, the annuity which he can then purchase will be very inferior indeed to that which he would have obtained, if he had entitled himself to the benefit of the accumulated savings of all those who, having contributed for many years to a superannuation fund, had never reached an age to require it.'—*Report of Committee on Friendly Societies*, 1825.

The sickness and annuity funds are essentially connected, and the tables for them are subjoined. It is to be remarked, that two, three, or four shares may be taken in all of these funds. Towards the annuity fund females pay one-fourth additional, in consideration of their lives being so much better than those of men.

II.—*Sickness Fund.*

Contributions and Benefits cease at 60.

Age.	Single Payment.	Annual Payment.	First Month.	Other Months.
	£ s. d.	£ s. d.	s. d.	s. d.
19	10 5 10	0 11 6	1 5	0 11
25	10 12 5	0 12 9½	1 9½	1 0
30	11 0 6½	0 14 3	1 5	1 2
35	11 8 8	0 16 2	1 6	1 4
40	11 16 0½	0 18 1	2 8	1 6
45	11 17 10½	1 2 4½	2 2½	1 10
50	10 18 6½	1 6 7	2 9	2 2

Contributions and Benefits cease at 65.

Age.	Single Payment.	Annual Payment.	First Month.	Other Months.
	£ s. d.	£ s. d.	s. d.	s. d.
19	11 3 10	0 12 4	1 4	1 0
25	11 19 7	0 13 11½	2 0½	1 1
30	12 15 5	0 15 9	2 6	1 3
35	13 13 9	0 18 1½	1 7½	1 6
40	14 11 0½	1 1 4½	2 1½	1 9
45	15 15 2	1 5 9	2 10	2 1
50	16 1 7½	1 11 1	2 8	2 7

III.—*Annuity Fund.*

Contributions cease at 60.

Age.	Single Payment.	Annual Payment.	First Month.	Other Months.
	£ s. d.	£ s. d.	s. d.	s. d.
19	7 15 0	0 8 4	1 0	0 8
25	10 10 1½	0 12 8	1 8	1 0
30	13 9 8½	0 17 5	1 10	1 5
35	17 8 5	1 4 7½	2 7½	2 0
40	22 14 1	1 16 1	3 1	3 0
45	29 17 3	2 16 2	4 10	4 8
50	39 16 7½	4 16 11	8 11	8 0

Contributions cease at 65.

Age.	Single Payment.	Annual Payment.	First Month.	Other Months.
	£ s. d.	£ s. d.	s. d.	s. d.
19	4 8 6	0 4 10½	1 2½	0 4
25	5 19 11½	0 7 0	0 7	0 7
30	7 13 11½	0 9 6	1 3	0 9
35	9 18 11	0 13 2	1 3	1 1
40	12 19 3	0 18 9½	2 2½	1 6
45	17 0 11½	1 7 10½	3 1½	2 3
50	22 14 9	2 3 11	4 6	3 7

The following is an example of the payments required for *one share* in all the three funds—namely,

Payments to cease at 60.

Age.	Annual Payment.	Monthly Payment.
	£ s. d.	£ s. d.
25	1 10 5	0 2 6½
30	1 17 3	0 3 1½
35	2 6 3	0 3 11½

Payments to cease at 65.

Age.	Annual Payment.	Monthly Payment.
	£ s. d.	£ s. d.
25	1 5 9	0 2 2
30	1 10 7½	0 2 6½
35	1 17 5	0 3 1½

So that a person of the age of 25, for an entry-money of 7s. 6d., and a payment of 2s. 2d. a month until the age of 65—or £1, 5s. 9d. a year—may secure an allowance of 10s. a week during sickness for 52 weeks; 7s. 6d. a week for other 52 weeks; and 5s. a week during the whole remaining period of sickness until the age of 65, an annuity of £8 a year during life after 65, and a sum of £10 at death.

For 4s. 4d. a month, or £2, 11s. 6d. a year, a person may obtain double of these allowances.

At an examination of the society's transactions and funds in December 1840, it was found that, after twelve years of business, when the deaths of unfree members, or persons who died in the first year of membership, were deducted, the mortality was within that allowed for the tables; and that all the three funds were in a good condition, each showing a surplus over what is necessary to make good the claims to which it was liable, when the value of the future contributions was taken into account against the value of the promised benefits.

For those who find occasion to go deeper into the subject of friendly societies, with a view to founding such institutions, we would recommend a careful perusal of the work which Mr Charles Ansell prepared for the Society for the Diffusion of Useful Knowledge, and which was published by that society in 1835. Much benefit might also be derived from Mr William Fraser's papers on Friendly Societies, published in Professor Jameson's 'Philosophical Journal' in 1837.

THE LOAN SOCIETY.

The modern history of Scotland has proved that advances of money to persons of the trading class, made by the banks under prudent cautions with respect to security, and the personal character of the borrowers, have a beneficial effect, supplying materials on which industry may work, and at once enabling many individuals to thrive, and giving a powerful impulse to the country at large. The well-cultivated face of our northern region bears powerful testimony to this fact. The institution called a Loan Society contemplates the same benefits to be conferred on a humbler portion of the trading class than those who resort to banks. By making small advances to such persons, it enables them to make little ventures in business which they could not otherwise have attempted, and often sends them forward upon a career which leads to their permanent advancement in life. The purchase of a cow or horse, of farm or mechanical implements, the discharge of rent, and the fitting out of a child for service or apprenticeship, are amongst the chief objects for which such loans are desired in the humbler walks of life. One might at first sight dread the effects of such anticipations of income; but, practically, the loan system, when rightly conducted, works well, and is productive of much good. 'A loan fund,' says a late writer, 'is a savings' bank reversed, and even leads to the savings' bank, if well managed. For instance, I have before me now the case of a man who, though he has a family, is able to put by at least one shilling weekly. I might have urged him for ever to do so, but it would have been to no purpose. He came to me to borrow 30s. from the loan fund to buy corn to fatten his pig; he paid back this regularly at the rate of one shilling a week; and at the end of thirty weeks I said to him, "Now, you have been owing me money, and have felt no inconvenience in paying it back; why should you not begin to make *me owe you?*" He had nothing to say to this, and is now a regular depositor in the —— Savings' Bank through my hands.'*

Loan societies are not institutions of yesterday; but, until a recent period, there were none upon an equitable or philanthropic footing. Government, sensible of the erroneous principles on which they were generally conducted, obtained an act in 1835 for their better regulation. By this statute certain benefits were held

* 'Prospects and Present Condition of the Labouring Classes.' By a Beneficed Clergyman. T. and W. Boone, London.

out to such loan societies as should be formed upon principles approved of by a revising barrister, and enrolled in conformity with the provision of the act for benefit societies. The principal benefits offered were exemption from stamp-duty, and certain powers for recovery of loans. Enrolled loan societies were forbidden by this act to make loans of above fifteen pounds, or to make in any instance a second loan until the first should be paid off. A scheme of rules for a loan society conformable to law is presented in the pamphlet quoted below.*

It seems here necessary to state, in the most explicit terms, that loan societies formed by interested individuals, are entitled to no confidence, being almost universally usurious and oppressive in their modes of dealing, and a source of great misery to the poor. There are upwards of two hundred loan societies in London, and almost without exception they are of the same character as pawnbroking establishments.† On this subject we quote the following passages from a valuable communication which appeared in the 'Times' newspaper:—'They generally originate with a knot of small tradesmen, who, having a surplus over the demands of their immediate business, find in them a profitable employment of their money. A capital of £500 has been known to start such a society—the paid-up capital eventually to be £2000, in shares of £5 each. It is very rare that the whole of the capital is at once paid down. Their rules in the outset describe the name and the constitution of the society; then follow the terms on which the shareholders have taken their shares, and the manner in which they are to receive a return for embarking money, which is the allowance of 4 per cent. interest per annum on the amount of subscription, while the balance of profit afterwards accruing is to be declared as a dividend. There are separate rules which apply to the borrowers from the society, which are called the "borrowers' rules." The general place of business is a public-house; some few, but very few, are carried on in offices hired for the purpose. The borrower has in the first instance to call on the secretary, director, or treasurer, all of whom are allowed to sell (at a profit) what are termed "application papers," and purchase one (they are either 2d. or 3d. each), fill in the amount of the loan he requires, and leave it with the name of one or two sureties, according to the amount, for the inspection of the directors. He calls again, and has to pay 1s. for his security being inquired into, which goes into the pocket of the director whose turn it happens to be to look after the securities, the emolument of this office always going in rotation. He calls again, and is told whether or not his security is sufficient; if not, he gives another security and another shilling; if it is, he is told to call on a certain evening when the loans are made, and he will be attended to. Should he give half-a-dozen securities, and none prove acceptable, he pays his six shillings—for nothing is returned. When the evening arrives, he is called in his turn before the secretary, treasurer, and two directors, who form the authorised court for the conduct of the business. He is asked what amount he wishes to borrow. Perhaps it is £5 for six months: the first thing is to deduct 5 per cent. from the amount of the loan, 1s. for the book with the "borrowers' rules," in which will be made the entries of his weekly payments (for the loan is repaid in this manner), and the first week's instalment, and then in addition 1d. in part payment of the rent of the office, and 1d. towards the secretary's salary, both of which expenses he is obliged by the "rules" to bear in common with the rest of the borrowers weekly. Should he fail to keep up his weekly instalments, he is written to by the secretary calling upon him to pay, and for this letter he is charged 3d., a fee for the benefit of the secretary. If he does not pay due regard to this, he is, at the expiration of three weeks, summoned before the magistrates of the district, who, however, have shown a disinclination to enforce the payment of the extras, and have confined their decisions merely to the sum due to the society after the deduction of the legal interest. That such societies occasionally sustain losses there is no doubt; but these losses are trivial in comparison to the immense profits they make, as will be seen from the fact that one of them, upon a capital of £2000, was known to declare on the first half-year's business a dividend of 15 per cent., and on the second half year a dividend of 18 per cent.'

A proper loan society is a modest association of philanthropic persons, connected with some limited district, who wish to aid the meritorious poor of their neighbourhood with small advances of money, with or without the prospect of a small interest for their outlay. Anxious only for the welfare of their humble neighbours, they extend their aid on terms strictly equitable; while they guard against abuses of another kind, by making loans only where, from personal knowledge, they are assured that a good use will be made of the money. It is only in such circumstances that a loan society will do any good, as it is only under certain circumstances, as to prudence and careful management, that the Scotch system of banking, which loan societies resemble, is attended with the contemplated results.

As far as our information enables us to judge, the loan-fund system is nowhere on a better footing than in Ireland. Private, irresponsible, and usurious loan societies exist there, as elsewhere, but apparently in less proportion to those of a beneficial character. The extensive utility of loan funds in Ireland is owing to the establishment, by an act in 1836, of a central board of commissioners, with power to inspect the books of all societies formed under the act. In consequence of this statute, there are now from two to three hundred loan-fund societies throughout Ireland, conducted on philanthropic principles, and said to be producing a great amount of good. In these societies all profits, after paying clerk's salary and other unavoidable expenses, are applied to charitable purposes. It appears that in 1840, 215 such societies were circulating £1,164,046 amongst 463,750 borrowers, and that £15,477 of profit had been realised in three years.

Mr and Mrs S. C. Hall, in the agreeable work on Ireland published by them, give the following account of the way in which one of these societies is usually constituted, and the manner in which the business is subsequently conducted:—'The resident gentry of some locality in which no loan society exists, perceive that such an institution is required, or would benefit the people in the district. A meeting is called, and as many as are inclined to become depositors state their intention of taking debentures from the new society, for which they receive interest, in some places 5, and in others 6 per cent. One party is voted treasurer, another honorary secretary, and three or four others trustees. Rules for the government of the society are then drawn up, and it is imperative that each set of rules shall contain a provision that no manager or trustee shall directly or indirectly derive any profit from it. Another rule must ascertain the limit to which the managers shall be at liberty to go in expenses of management; and a third, that the treasurer shall become bound with solvent sureties in a reasonable amount for the faithful performance of his duties. These rules are then transmitted to the secretary in Dublin Castle, for the approval of the Board, who make any alteration in them they may deem expedient; and the copy is then returned to the society, that three fair transcripts may be made and sent up for certification. On their reaching the secretary, he submits them to the certifying barrister, who, if they are in accordance with the acts, attaches his certification and signature that such is the case. One of these transcripts is then lodged in the office of the secretary to the Board, another with

* 'Instructions for the Establishment of Loan Societies.' London: Printed by W. Clowes and Sons, for her Majesty's Stationery Office. 1837.

† The reader may consult 'A Guide to nearly One Hundred Loan Societies.' London: W. Strange.

the clerk of the peace of the county in which the society is situated, and the third is transmitted to the treasurer of the society, as a voucher that his society is entitled to the privileges conferred by the act.

The society is then in legal existence, and commences operations. A person is appointed clerk, and to him the intending borrowers apply for application-papers, which are according to the form printed in the subjoined note,* and for each of which a penny or a halfpenny is generally charged.

This being filled up, and returned by the applicant, his solvency and general character, with those of his sureties, are considered by one or two of the trustees in council met for the purpose; and if approved, the full loan applied for, or such portion of it as they may think proper to grant, is paid to the borrower, stopping, at the time the loan is issued, sixpence in the pound by way of interest. The borrower then receives a card, on which the amount lent to him is entered, and the instalments he pays are marked off. A duplicate of this, or a proper account of the transaction, is of course booked by the society. The borrower, and his sureties for him, bind themselves to repay the amount of the loan in twenty weeks, by instalments of one shilling in the pound per week. Thus, if a borrower applies for a loan of £5, which is approved, the society hands him £4, 17s. 6d., retaining two shillings and sixpence as interest. He then pays five shillings for twenty weeks, and the £5 is paid off. Should the borrower run into default, he subjects himself, in most societies, to a fine of one penny for the first week, and threepence for the second and every succeeding week, on each pound lent him; and should he remain two weeks in default, his sureties receive notice that they will be sued for the amount, together with the fines incurred; and unless the borrower comes in, this is immediately done. But in the very great majority of cases no such steps are necessary, the poor borrowers being generally very punctual in their repayments.

It has been objected by some, that the borrowers lose their time in repaying these instalments, but in practice the personal attendance of the borrower or his sureties is seldom given. The instalments of a whole neighbourhood are frequently brought in by a child, or some old person, fit for no other employment, who goes, *per viosm*, for two or three town-lands. "Indeed," remarks the Rev. Mr Nixon, of Castle Town, "it is quite delightful to see the confidence reposed by the borrowers in the persons who carry their instalments, and also the fidelity and accuracy, nay, even the tact, that these latter evince in the discharge of the duty they have undertaken." In some places the amount of interest charged is less than that above stated, and in others the fines are higher. There is no uniformity in these matters, nor have the central Board any power of enforcing it, though it is evidently desirable.

Mr Hall, adverting to the Third Report of the Loan Fund Board to Parliament, says, 'It appears by this return—and the circumstance is so remarkable as to appear at first incredible—that out of an amount of £1,164,046 circulated in small loans amongst 463,750 individuals, so small an amount as £360, 16s. 8d. only should have been lost, or about ⅛d. in the pound. We were very sceptical on this point, and consequently directed vigilant attention to the subject; when, what was our surprise to find that even this £360—this ⅛d. in the pound—is considerably more than has been really lost, or left deficient by the poor borrowers! From the "list of societies whose accounts show a loss on the transactions of the year 1840, after paying interest to depositors and expenses of management," we took the first—namely, Mitchelstown, where the reported loss was £43, 2s. 6d., when we ascertained that this society lent during 1840, £5420 amongst 3070 borrowers, who paid £135, or sixpence in the pound, for its use, besides £11, 10s. 10d. for the price of their application-papers and cards. The society paid in interest for money lent to it, and expenses of management, £190, 3s. 4d., and the difference between its receipts and disbursements constitutes this £43, 2s. 6d., not one penny of which was lost from defaulters. We are informed by a person in every way competent to judge, it is his firm belief that out of this £1,164,046 lent, not the odd £46, or not *one-tenth* of a farthing in the pound, was unpaid. This fact alone speaks volumes for the honesty of the people, and their appreciation of the benefit which the loan funds confer on them.

It has been argued that this security from loss has arisen in consequence of the powers which the law gives for the recovery of the loans; but the observation is equally applicable to societies more strictly private. For example, in New Ross a society has been established upwards of forty years, for the lending small sums to the poor; and the sum lost during the whole of that period is within five pounds. This fact we give upon the authority of the Rev. George Carr; we could adduce others equally strong, and we have no doubt might receive similar statements from nearly every institution of the kind in Ireland. We rejoice greatly at the opportunity thus supplied us of bearing out, by unquestionable proofs, our own opinions in favour of the honesty of the Irish peasant. It is indeed a subject upon which satisfactory evidence is especially necessary; for it has been too frequently and too generally questioned in England, where, upon this topic particularly, much prejudice prevails, and where it has been far too long the custom to

"Judge the many by the rascal few."

We therefore, from the very minute inquiries we have instituted, have no hesitation in arriving at the conclusion, that the loan funds in Ireland will speedily become, nay, are already, mighty engines either for good or evil, according as they may be worked and superintended. Where properly managed, they cannot fail to exercise a vast influence on the moral and social condition of the people; where conducted carelessly, or by parties endeavouring to force business for their own gain, they may be indeed considered a moral pestilence, blighting the energies of the surrounding population, and fostering habits of improvidence or dishonesty.'

THE ANNUITY.

The purchase of an annuity is a mode of providing for the latter part of life, which may be the most appropriate in some instances, especially where a person

* APPLICATION FOR A LOAN FROM THE ——— LOAN SOCIETY.

Former Loan (if any) No.
Amount, £ Fines, s. d.

I, ——— ———, of ———, parish of ———, county of ———, of which the Petty Sessions are held at ———, and holding acres of land, request that I may be accommodated with pound shillings, according to the rules of the ——— Loan Fund, which I intend to employ in , and of which I solemnly declare that the whole is to be applied to my own use, and not divided with any other person.

——— ———.

I certify that the above-named ——— ——— is personally known to me, and that I consider to be a solvent, honest, industrious person, and that I believe the above statement to be perfectly correct.

Given under my hand, this day of 184 .
Signed, ——— ——— of ———.

[It is requested that no person will certify for an IMMORAL PERSON, or for one who does not live industriously in some calling.]

We whose names are hereunto subscribed, will guarantee the payment by a promissory-note of £ , s. to the treasurer for the time being of the ——— Charitable Loan Society, applied for by ——— ———.

Given under our hand this day of
——— ——— of ———, of which the Petty Sessions are held at ———, possessed of property in ——— to the value of at least £
——— ——— of ———, of which the Petty Sessions are held at ———, possessed of property in ——— to the value of at least £

is unconnected with wife, children, or other near relatives, or where these have been otherwise provided for. When the case is different, such a mode of provision is liable to the charge of selfishness, in as far as it concentrates the benefit upon the purchaser alone; it has also been thought to tend to encourage improvident and careless habits, seeing that, once assured of a competent provision for life, the stimulus to further saving is in a great measure destroyed.

There are numerous companies which grant annuities on the principle of making a profit by them; and sometimes this branch of business is carried on in connection with that of life-assurance. There are also associations of individuals for obtaining annuities and endowments to widows and other nominees on the mutual assurance principle; and one large class of these, at present flourishing in various parts of the United Kingdom, are said to be based on unsound calculations, and fraught with disappointment to those relying upon them. There is indeed one circumstance generally unfavourable to annuity business—namely, that the ordinary tables of mortality present views of the expectation of life somewhat below what is at present the truth in England. Hence what makes life-assurance business everywhere so prosperous, is precisely that which tends to make annuity business a source of loss. It is obvious that, where individuals unite for annuities, and too low charges are made, those dying first will secure an over-proportion of the benefits, and leave those who come behind nothing but an empty purse.

With a view to encourage persons of the humbler classes to provide of themselves for their latter years, the government obtained an act (3 and 4 Will. IV. c. 14) to enable trustees of the legally-established savings' banks to sell annuities of not less than four or more than twenty pounds upon the security of the national credit. The same act provided that, in parishes where there was no savings' bank, a society for granting such annuities might be formed, provided that the rector or minister of the parish, or a resident justice of peace, should be one of the trustees. Any person above fifteen years of age was entitled to purchase such an annuity, which might be to commence immediately, or at a future period of life, or for a limited term of years, at the pleasure of the party, and might be paid either in one sum or in half-yearly sums, convertible into quarterly by dividing the annuity, and commencing the two parts at different periods of the year. The whole arrangements of this act were dictated by the most considerate benevolence towards the classes designed to be benefited. To quote an authoritative document:—'Provisions are made for enabling the party to make his annual payments, or receiving the annuity, at any other society than the one at which the contract was originally entered into. Upon the death of the person on whose life the annuity depended, a sum equal to one-fourth part of the said annuity (over and above all half-yearly arrears thereof respectively) will be payable to the person or persons entitled to such annuity, or his, her, or their executors or administrators (as the case may be), provided such last-mentioned payment shall be claimed within *two years* after such decease, but not otherwise; provided also that the fourth part of any expired life annuity, payable under the provisions of the said act, will not be payable, nor be paid upon, or in respect of any *deferred life annuity*, unless one half-yearly payment of such deferred life annuity shall have been actually paid or become due at the time of the decease of the nominee. Independently of the advantages which are thus afforded to the industrious classes to obtain, by small payments, a certain provision in old age, or at any other stated period, *secured by government*, and of which they cannot be deprived on account of miscalculation, the tables of contributions have been so calculated, that *if the purchaser of a deferred life annuity die before the time arrives at which the annuity is to commence, the whole of the money he has actually contributed will be returned, without any deduction, to his family.* And if it does not exceed £50, it is not necessary that probate or letters of administration should be taken out. But if he has left a will, or administration is taken out, no stamp or legacy duty is payable in respect of the sum so returnable, if the whole estate, &c. of the member is under £50; and again, *if a purchaser is incapable of continuing the payment of his yearly instalments, he may, at any time, upon giving three months' notice, receive back the whole of the money he has paid.* No annuity granted will be subject or liable to any taxes, &c.; nor can the same be transferred or assigned, but must continue to be the property, or be received for the benefit, of the party by or for whom it was purchased; but in case of the bankruptcy or insolvency of the purchaser of an annuity, the same is to be repurchased by the commissioners at a valuation according to the tables upon which the annuity was originally granted, and the money will be paid to the assignee for the benefit of the creditors.

From the above statement it will appear that any *deferred annuity*, purchased by annual or other payments, from a society established under the stat. 3d, Will. IV. c. 14, will entitle the purchaser (if he live to the age at which the annuity is to commence) to receive an annuity equivalent to the value of all his payments, with the accumulation of compound interest; if he be unable to continue his yearly instalments, he may have back all the money he has paid, exclusive of interest; and if he die before the commencement of the annuity, his family will, in like manner, receive the whole of the contributions he may have actually made previous to his decease, exclusive of interest.'

The tables on which the government annuities are granted have been formed, as might be expected, on the soundest principles, and are entitled to the greatest respect. They relate to four kinds of benefit—deferred annuities upon the continuance of single lives, immediate annuities upon the continuance of single lives, deferred annuities to continue for a certain term of years, and immediate annuities to continue for a certain term of years. The whole are presented in a brochure quoted below.* We extract only one specimen—namely, the terms of an annuity of £20, payable after twenty years from the time of its purchase:—

Age of the Person at the time of Purchase upon whose Life the Annuity is to depend.	Yearly Sum required.			Money to be paid down in One Sum at the time of Purchase.		
	£	s.	d.	£	s.	d.
15 and under 16,	10	11	6	157	11	9
16 17,	10	9	0	155	17	6
17 18,	10	7	0	154	3	0
18 19,	10	4	6	152	7	0
19 20,	10	2	0	150	10	6
20 21,	9	19	6	148	13	0
21 22,	9	17	0	146	13	6
22 23,	9	14	0	144	11	6
23 24,	9	11	0	142	8	6
24 25,	9	8	0	140	2	6
25 26,	9	5	0	137	15	0
26 27,	9	1	6	135	4	6
27 28,	8	18	0	132	11	0
28 29,	8	14	0	129	15	6
29 30,	8	10	6	126	18	6
30 31,	8	6	6	124	1	0
31 32,	8	2	6	121	2	6
32 33,	7	19	0	118	6	6
33 34,	7	15	0	115	11	0
34 35,	7	11	6	112	17	0
35 36,	7	8	0	110	3	6
36 37,	7	4	6	107	11	0
37 38,	7	1	0	104	19	0
38 39,	6	17	6	102	7	6
39 40,	6	14	0	99	15	0
40 41,	6	10	6	97	1	6
41 42,	6	6	6	94	5	6
42 43,	6	2	6	91	7	0
43 44,	5	18	6	88	6	0
44 45,	5	14	6	85	5	6

* 'Instructions for the Formation of Parochial Societies for granting Government Annuities.' London: Printed by W. Clowes and Son, for her Majesty's Stationery Office. 1837.

BENEVOLENT PAWNBROKING.

The necessities of the humbler classes have given rise to the trade of pawnbroking, which, even when conducted, as it often is, by respectable persons, certainly forms a severe punishment upon the poor for their poverty. On this subject some exaggerated views have of late years gone abroad; but there can be no doubt that the poorest class, in pledging small articles for short periods—and the greater part of pawnbroking business appears to be of this kind—are subject to enormous extortions, calculated most materially to keep them in a depressed condition. It has been said that £3000 is annually lent by pawnbrokers in Ireland in one shilling loans, and that this sum actually produces to the lenders in a year not less than £19,500. To a poor person in want of a shilling for a week, it appears no great hardship to pay a penny for the loan of it; but when we consider that this is, in reality, borrowing money at 433½ per cent. per annum, the hardship of the case is presented in its true light. Nor is the licensed and ostensible trade of the pawnbroker the worst of the case. Wherever a large horde of very poor people is collected in our large towns, there rises an unlicensed and clandestine species of the trade, conducted upon principles still more ruinous to the needy. It has been shown that there are in Glasgow many hundreds of small unlicensed pawnbroking establishments, whose extortions from the poor infinitely exceed the legal rates to which the licensed traders are restricted. The saying of Solomon, that the destruction of the poor is their poverty, was never perhaps shown in a more forcible but melancholy light than in the losses which they endure in consequence of the necessity they are occasionally under of raising money by pledges.

On the continent, the system of lending upon pledges has been practised for several centuries upon a benevolent principle. The establishments where the business is carried on are called *Monts de Piété* (*mounts* being a term applied to heaps of money, while the word *piété* expresses the religiously benevolent views in which the plan originated). In this case an association of benevolent persons, possessing a little capital in common stock, are the pawnbrokers, and the objects they keep in view are to make the evil of pledging as light to the poor as possible, and to apply the profits to charitable purposes by which the poor will be benefited. Here there is no extortion, no punishment for poverty, and the poor, as a body, may be said to lose nothing. In France, some abuses are said to have crept into the system; but these are not essential to it, and we have had experience nearer home how much good may be done by a well-conducted Mont de Piété.

The first establishment of the kind in the United Kingdom was set up at Limerick in 1837, through the exertions of a gentleman named Barrington, for the purpose of supplying funds to an hospital which he had founded out of his own fortune. The required capital was raised by debentures (or joint-stock shares) varying in amount from one to five hundred pounds each, upon which interest was to be allowed at the rate of 6 per cent. These might be withdrawn at three months' notice, or money would be advanced upon them as pledges. Mr Barrington described the following as the advantages proposed by his scheme:—

'*1st*, The raising a capital by small debentures at a certain interest, and lending it on a greater interest, and applying the profits to the purposes of charity.

2dly, Receiving the debentures in pawn, thus giving to the depositors an advantage which they do not possess in the savings' bank.

3dly, Lending money at interest to poor persons of unimpeachable character and industrious habits, on personal security, as is done by the loan banks.

4thly, Lending money on goods, as is now done by the ordinary pawnbrokers.

5thly, In case of deserving objects, to restore the article, such as implements of trade pawned in the hour of *real* want, without interest or charge.

6thly, Using every precaution against receiving stolen goods in pawn.'

The plan meeting with a hearty approval, a capital of above £15,000 was quickly subscribed, partly by the gentry, and partly by persons in the humbler walks of life. An active and intelligent person, who had himself been a pawnbroker, was placed at the head of the establishment, which had no sooner commenced business than it became largely supported. The following view of the transactions, from March 1837, when it commenced, up to December 1840, is given by Mr and Mrs Hall in their work on Ireland:—

Years.	Amount lent on Pledges.			Amount received for Released Articles.			Gross Profit.*		
	£	s.	d.	£	s.	d.	£	s.	d.
1837,	14,180	1	6½	9,828	11	10½	335	2	7½
1838,	17,895	13	3½	16,922	15	8½	1074	18	4½
1839,	21,091	7	8½	20,737	19	4½	1178	13	8½
1840,	25,428	6	5½	23,675	1	5½	1557	13	11
Total,	78,596	9	0½	71,065	8	7	3949	10	2½

There is no charge for tickets at this establishment; consequently if those pawns were pledged at a pawnbroker's, the poor would have to pay for each pawn a sum of one penny; if the amount borrowed amounted to 10s., twopence; if it amounted to 40s., fourpence: therefore (not at all taking into account the low rate of interest) the saving effected by the very poorest persons is most remarkable. For instance, say that

360,000 of those pledges were	under 10s.,	at 1d. each,	£1500	0	0
60,000	do.	under 40s.,	at 2d. each,	750	0	0
10,895	do.	over 40s.,	at 4d. each,	181	11	8
Or a sum saved in four years on the bare item of tickets, to the very poorest people, of				£2431	11	8

If to this be added the saving in interest, we may safely calculate that nearly as much in addition is saved as the establishment is realising—as the following table will show the difference in the rate of interest, for different sums, to 10s. and £1.

Sum Lent.			Mont de Piété Interest.	Pawnbroker's Interest.	Pawnbroker's *Total Charge* of Interest and Ticket.
£	s.	d.	d.	d.	d.
0	1	0	0½	0½	1½
0	2	0	0½	1	2
0	3	0	0½	1	2
0	4	0	1	1½	2½
0	5	0	1	1½	2½
0	6	0	1½	2	3
0	7	0	1½	2	3
0	8	0	1½	2½	3½
0	9	0	2	2½	3½
0	10	0	2	3	5
1	0	0	4	3	7

The Mont de Piété of Limerick having been attended with success, insomuch that it supports the hospital for the sick poor of the city, similar establishments have been opened at Belfast and Tandragee, and the example will doubtless be followed in time on this side of the Irish Channel. In September 1840, at the meeting of the British Association held at Glasgow, an interesting paper on the subject of the Irish establishments was read by Mr H. J. Porter, from which we make the following extract:—

'At the close of the first nine months of the operations of the Tandragee Mont de Piété, I was able to show that the borrowers from the loan fund department, on personal security, had in their possession 1189 looms, of which 612 (more than half the number) were hired at 10s. per annum. One man had at that period

* The total number of pawns received since the establishment opened, to March 19, 1841, was 460,895.

one loom, for which he had paid £12 within the previous twenty-four years, without any other alteration than that which was necessary on the invention of the fly-shuttle; and after having paid the price of four new looms in interest, he was not at that time the owner of one. Here, as in many similar cases, the Mont de Piété was the means of relieving the poor, and the owners of looms for hire began to find it difficult to let them out. One farmer, indeed, proposed to sell his stock of looms to the institution, finding the hope of his gain drawing to a close; but of course the proposal was rejected, as these old looms were incapable of producing as good a fabric as the new looms issued by the Mont de Piété.

At the period of which I speak—namely, the first nine months of operation—above 2600 loans had been granted for the following purposes:—

For provisions,	Loans, 556	Amounting to £1640
Materials for trade,	128	492
Dealing,	198	664
Clothing,	41	81
Repairs of houses,	81	148
Yarn for weaving,	187	612
Looms,	131	448
To pay small debts,	70	198
To buy cows,	504	2569
... pigs,	378	1223
Farming purposes, seed, &c.	266	826
Rent,	77	252
Total,	2608	£9070

In order to form some idea of the benefit derived by these borrowers, I examined great numbers of them as they appeared on the payment of the last weekly instalment. I ascertained pretty nearly the amount of money saved or realised by their having the advantage of ready money, and from these I formed an average estimate of the whole.

Oatmeal,	£1100	Saving,	£308
Potatoes,	530	...	336
Cows,	2569	Profit,	1284
Pigs,	1223	...	166
Dealing,	664	...	166
Total,	£6096	Total,	£3596

Had the Mont de Piété conferred no other benefit on the country than that derived by the peasantry, in procuring their summer provisions for ready money, that alone would amply repay the directors for all the labour bestowed on the working of the institution. What were the circumstances of these 550 families in bygone summers? Many of them found it difficult to procure credit, or obtain a sufficient supply of wholesome food for the maintenance of their families; idleness prevailed, sickness increased, and not unfrequently fields were mortgaged to more wealthy neighbours, who supplied the wretched holders of two or three acres of land with the required food at an exorbitant price. Others, whose credit was good, passed promissory-notes, payable at harvest, and not unfrequently they were charged for meal 6s. or 8s. per cwt. more than the market price, independent of the expense of stamps; and it was no uncommon practice for a poor man, wanting the immediate use of a few pounds in money, to purchase oatmeal from a forestaller of provisions, while a third person would buy back the oatmeal from the poor man at a much less price than he was charged, hand him the money, and the oatmeal would never be delivered, but sold again by the forestaller to the next customer. The object of this transaction is evident. The value of a promissory-note for provisions would be easily recoverable at the quarter sessions, while one for cash, bearing usurious interest, would be likely to involve the forestaller in an open violation of the law. Thus were the poor on every side oppressed: the harvest-time arrived, and the debts for the supply of summer provisions were generally first paid from the produce of the farm; too often were they unable to pay just demands of rent and other charges, while in few cases were they able to hold over their corn till the most favourable time arrived for bringing the produce of their farm to market.

What, on the other hand, has been the experience of the last summer? Those 550 families borrowed, on moderate interest, from the Mont de Piété, £1640, and by habits of industry and increased diligence, their weekly instalments are paid; at harvest, instead of being deeply involved in debt, they owed nothing for their summer's food, and the produce of their land has in many cases been reserved for weeks, till the best price could be obtained; they are able not only to pay their rents, but to supply themselves and their children with better clothing. But other moral effects have followed. Halfpence and pence, which formerly were squandered in tobacco, snuff, and ardent spirits, are treasured up for the Monday morning's instalments, and the people are beginning to feel the value of small sums, and the truth of the old homely proverb, that 'if you take care of the pennies, the shillings will take care of themselves.'

Again, we find that £2569 has been borrowed for the purchase of cows. The benefit to the poorer classes in this particular is incalculable—the health arising from the possession of an abundant supply of milk; the improvement on their farms, by sowing green crops for the maintenance of their cows; the increased quantity of manure which is provided for the land—while it has been ascertained that in twenty weeks the generality of cows purchased have paid, by the produce of milk and butter sold, one-half of their own cost. Hundreds of families are now possessed of a cow each, and great numbers have already procured a second. As a proof of the saving habits which are promoted by this system, I may mention that a respectable person has settled in this town, whose sole business is the purchase of butter and eggs for exportation; and he finds it frequently difficult to attend to the immense influx of persons who come to sell their produce to meet their weekly instalments. One poor woman borrowed a pound; she bought five hens for 4s. 2d.; she expended 15s. 10d. in clothing; and at the end of the twenty weeks her five hens had been the sole means of paying off her debt to the loan fund.

But what is the testimony of the manufacturers in the neighbourhood? That the industry which is promoted by the necessity of those weekly instalments, and the punctuality of the weavers in returning their cloth, has already had the most beneficial effects.

And how are persons in trade affected by the operations of the Mont de Piété? I have it from the best authority, that a great increase of business has been the result, and a greater degree of punctuality in meeting all engagements on the part of the poorer classes. One class alone are suffering from the effects of the Mont de Piété, and they are little deserving of compassion. Those who live by the destruction of others, both soul and body, are not to be commiserated—those who keep open houses for the drunkard—and when they have given a poor person as much whisky as they think he can pay for, or is able to consume, turn him out, incapable of taking care of himself, and exposed to the risk of a watery grave in the next river or canal he meets—those are surely persons whose lack of business and prosperity is a blessing, and whose failure in trade must be held as a common good. I have undoubted authority for saying that the temperance cause and the Mont de Piété are going hand-in-hand; and the twopence for the morning glass, or the shilling for the night's carousal, are now carefully saved to meet the weekly instalment.

I might enlarge on the important benefits which this institution confers upon the working-class—above £1200 expended in the purchase of pigs, which are such a source of wealth to the Irish poor, being nearly fattened on the refuse from the tables of the owners.'

We must be excused for adding, in illustration, one more anecdote from a report by Mr Haynes of the

Limerick establishment:—'A poor woman, when the institution first opened, was in the habit of pledging every morning her bed-tick for two shillings and sixpence, and redeeming it every evening; this she did for the purpose of purchasing potatoes from the country people, and retailing them afterwards in small quantities, at a higher price, thereby endeavouring to support her family: for this loan she *daily paid the pawnbroker the sum of twopence*. When the Mont de Piété opened, she, being only charged a halfpenny, saved three-halfpence daily, which eventually enabled her to raise a small stock-purse of ten shillings; and she now seldom, if ever, visits even that office.'

THE PROVIDENT DISPENSARY.

On the subject of medical attendance, the working-man, in ordinary circumstances, may well be at a loss how to act; for, on the one hand, when he calls in a doctor on account of himself or his family, he is oppressed by the high charges for attendance and medicine; and on the other, if he resorts to a dispensary or hospital, he loses his independence. That these are evils of large amount, and widely prevalent, might easily be shown. In England, the ordinary medical practitioner charges for medicine only, but he gives much of that, and places a high price upon it. A working-man, ill for three weeks, will find, on his recovery, a bill of thirty or forty shillings run up against him, either causing him to break up his little hoard in the savings' bank, or keeping him in embarrassment for the ensuing twelvemonth. Conducted as the medical profession is in that country, it is impossible, in short, for a poor man to have independent medical attendance which he means to pay, without the most serious pecuniary distress being entailed upon him. So severely is this felt, that the resort to medical charities has of late years been rapidly on the advance in England, both involving more individuals, and individuals of a better class than formerly. In 1821, when the population of Manchester was 158,000, the dispensary patients were 12,000. In 1831, when the population was 230,000, this class of patients had advanced to 41,000; an increase of fully two to one. It was calculated in the latter year that, of all the persons ill and requiring medical advice, the dispensary patients were a majority. Similar facts are stated with respect to Leeds and Birmingham. It would appear as if a wide-spread demoralisation were going on throughout England from this cause. Dr Holland of Sheffield has recently published a volume calling attention to the subject. He sets out by stating very broadly, as his opinion, that the character of the working-classes in Sheffield were, at the period of his writing, undergoing a certain degree of deterioration, in consequence of so many charities, and particularly medical charities, being thrown open to them, the self-respect connected with independence being thus gradually worn away, and with it the virtues which have never yet been found to exist without it. The Infirmary, we are told, was established for the benefit of the poor and needful of all nations; but it never, our author argues, could have been designed for those who are able otherwise to obtain the desired aid. Now, however, the fact of being an operative is held as a sufficient claim. 'The artisan never dreams of the possibility of rejection on the ground of being in full and regular employment, and being amply remunerated for his labour. He applies now as naturally to the charity when he is sick as to the tailor for the repair of his clothes, with this difference, that he would be perfectly astonished were any one to hint at the propriety of paying for the favours conferred by the former.' Our author argues against the following classes at least having any right to the benefits of the institution:—Single men in employment—married men with only young and small families—men with several children but high wages—men who have several sons and apprentices working along with them—servants in situations. All of these persons, excepting the last, must be able to provide medical attendance for themselves, if they economise their resources. He presents a hundred cases of applications, being those within the few weeks before the time when he was writing, and out of these he shows that there were fifteen young single men, all of whom but two had been in employment till the time of their illness, twelve at well-paid trades, and one as a labourer. Eleven cases were married persons without children; and thirty-two applicants were married, with only one or two children. In some of the latter instances, 'the only child is a daughter eighteen or twenty years of age, who has never been allowed to go out to place, or to learn any business; in others, a son apprenticed to his father, and both in regular employment. In one instance, where the wife was the patient, the daughter was in a warehouse, and the son, a youth of fourteen years of age, was a day scholar in a respectable private academy in the town. The husband had received regularly twenty-four shillings a week for the last twenty years. Many of the thirty-two cases are even more flagrant instances of impositions on the charity.'

Certainly in the whole number of applicants for relief, as far as our author has described them, we do not find that proportion of persons likely to be in necessitous circumstances which might be expected. To support his views, he brings the testimony of the house-surgeon, who, in answer to queries put to him, says, 'The character and appearance of the patients generally are very different from what they were fifteen or twenty years ago. The patients are much more respectably dressed, and in better circumstances. Many now, not from inability to walk, are conveyed to the house in hackney-coaches. . . . They apply for much more trivial ailments than formerly.' The author, from the data afforded him, speaks of females who come to the institution in elegant cloaks, shawls, and clogs. Not one-half of the applicants have the appearance of indigence. 'The frequency with which they apply for very trifling ailments, such as slight symptoms of indigestion, coughs, or occasional pain, or, indeed, for the removal of disease which just perceptibly mars the beauty of the face or neck, is evidence that their situation in life is very remote from those circumstances which entitle them to the sympathy of the benevolent. *The really poor never apply for the relief of slight and unimportant complaints.*' Afterwards he adds—'In evidence of the trifling nature of many of the medical cases, we may state that one-half are often cured in ten days, and two-thirds in three weeks.'

The results of his inquiries at the dispensary are nearly the same. The great bulk of the applicants are either themselves artisans in the receipt of good wages, or the connections of such persons. They come in respectable apparel, and when visited at their homes by the medical men, are found to possess every appearance of domestic comfort. Recommendations from subscribers to the institution are necessary to procure admission; but these are given, in seven cases out of ten, by persons who have no knowledge of the circumstances of the applicants. 'A gentleman who, from his position in society, is often applied to, informs us that he always refuses, unless the individual bring a letter from his employer, stating that he is a necessitous object; and though promising to give a recommendation on this condition, *not one in twenty returns to receive it.*'

Facts still more remarkable are brought out by Dr Holland. 'The distresses of a community,' he says (meaning such a community as that of Sheffield, upon which he founds his opinions), 'will be admitted to bear a strict relation to the state of trade. When this is extremely depressed, many hands are thrown out of employment. When the trade is good, the demand for labour is great; wages advance, and the blessings of plenty are universally experienced. The amount of misery or destitution cannot be the same in these very different circumstances. It cannot be a fixed quantity floating in society. The idea is preposterous; and yet, if the registered demand for charity be any criterion of the misery existing, there is indeed a quantity subject to scarcely any variation whatever.

From midsummer 1835 to midsummer 1836, between which periods trade was better in this town than it had been known for years, the number of patients admitted on the books of the Infirmary was 3126. From midsummer 1836 to midsummer 1837, between which periods trade was exceedingly depressed, the number was 3431, being an increase only of 305 patients. Between the former periods the number of patients on the books of the Dispensary was 2888. Between the latter periods—that is, from July 1836 to July 1837—the number was 2575, being less by 313 patients. According to these returns, there were *eight patients more during a prosperous state of trade, recipients of medical charity, than during the severe depression of it.*'

Dr Holland elsewhere states that healthy seasons are marked by no diminution of the number of applicants. 'We hesitate not to assert that, during the last twelve months, there has been less disease in this town and neighbourhood than has been known for many years, and yet during this period the demands on medical charities have increased.'

As a remedy to these evils, some benevolent persons, with the co-operation of a few of the more liberal of the medical profession, have instituted what are called *Provident Dispensaries*, the main feature of which is, that the working-man contributes a small sum weekly from his earnings, to entitle him to medical attendance and the requisite medicines, in the event of illness entering his household—the united contributions of a few hundred members being sufficient to engage a respectable physician, and defray all the other expenses. Such institutions have been tried with marked success at Coventry, Derby, and some other places. They are limited strictly to the class who are unable to fee medical attendants in the ordinary way, but who are yet anxious to keep themselves in all respects above the condition of paupers. Individuals wishing to belong to the provident dispensaries must join when in good health, as the object is in reality an 'assurance' against sickness, and the provident character of the institution could not otherwise be maintained. One penny a week is paid for each adult of the family, and a halfpenny for each dependent child. Individuals of the more affluent classes contribute without the design of benefit for themselves, in order to encourage the institution, and from them in general the directing body is chosen — the only part of the arrangement which we cannot fully approve of. From the proceeds a medical man is feed, and medicines are provided; and it is remarkable that a thousand sick persons connected with a provident dispensary have been found to cost considerably less than a similar number of patients resorting to the medical charities. The tendency of such institutions to maintain the moral uprightness of the working-classes is obvious; and it is already proved that, wherever they have been planted, applications for parochial relief have been diminished. It is to be lamented that medical men have a prejudice against them, probably from no other cause than that small copper sums are concerned in supporting them. But surely it is better even for medical men that the humbler order of patients should pay something within their means, and that regularly, than only pay in a few instances, and in others either resort to charities or leave a large debt unliquidated. Of the same nature with these dispensaries is the practice, now pretty extensively adopted at public works where a great number of hands are employed, of compelling each workman to deposit a certain amount of his wages for the purpose of medical aid—a practice which has been attended with the best results in many instances which have come under our own knowledge.

Whatever may be the sentiments of the profession upon this point, it must be evident to all that, for the working-classes themselves, the provident dispensary is a most unexceptionable species of institution. It carries them over one great difficulty in their career with the preservation of their independence; it does more, for, being on the assurance principle, it encourages habits of foresight. Some other advantages presumedly incidental to it are thus stated by Mr P. H. Holland, in the pamphlet above quoted:—'Assistance in sickness is much more easily accessible in provident than honorary dispensaries. The patient need not lose time, or degrade himself, by running about to beg a recommendation, but applies at once for an attendance ticket, and puts himself under the care of the medical officer of his own choice; in fact, procures assistance just as readily as the richest of the land. Consequently, as I am informed by Mr Nankivell, at the Coventry Dispensary, the cases being seen by the surgeons at the very outset, the probability of a successful result is much higher than in ordinary dispensaries: for instance, at Coventry, they have lost, out of 6094 patients attended, 92, or 1 in 66; at the Chorlton-upon-Medlock Dispensary, in the same period, out of 6438 patients admitted, 210 died, or 1 in 30·6. All who have had experience in ordinary dispensary practice, will know the advantage of getting the cases early; for, at present, very many patients, rather than undergo the trouble, unpleasantness, and painful sacrifice of honest pride, will not apply for a recommendation until they dare delay no longer; consequently, many cases are not under treatment until the only time at which it could be available is past, and it is this which renders dispensary practice so harassing.

It is probable, nay certain, that the large number of patients, in proportion to the deaths, is in a great measure owing to the very easy access to a provident dispensary, causing many to apply on very trivial occasions; but who shall say how many of these trivial cases would have become serious, or even fatal, if neglected? But this partial explanation will not at all account for the very gratifying result which, by the following analysis of the reports of the Coventry Self-Supporting Dispensary, I have elicited—namely, *that the average mortality among the members of that dispensary is considerably less than the average mortality of the country generally.* This is the more remarkable, as it is fair to presume that the sickly will be more ready to subscribe than those in robust health, and therefore we might have expected a mortality somewhat greater than the average. The mortality of a town like Coventry is about 1 in 50 per annum. The following table exhibits the number of members, upon the presumption that each on an average contributes at the rate of 3s. per annum, which must be very near the truth, as adult members pay one penny per week, and children a halfpenny, while any more than two in a family, below twelve years of age, are not charged:—

Years.	Calculated Number of Members on the Average of the whole Year.	Patients Admitted.	Deaths.	Computed Number of Members to each Death.	Number of Cases to each Death.	Amount of Honorary Subscriptions and Donations for Expenses of the Establishment.	Amount of Members' Subscriptions, from which Fund the Drugs are paid for, and the remainder.	Paid to the Surgeons.
						£ s. d.	£ s. d.	£ s. d.
1834,	2670	1558	20	133	77	143 6 6	400 12 0	268 0 0
1835,	2771	1565	27	102	58	114 4 0	415 13 1	287 2 0
1836,	2520	1426	17	155	83	124 6 2	397 9 8¼	262 3 0
1837,	2614	1551	28	93	55	101 18 6	392 2 1	261 15 0
Averages,	2676	1523	23	121	68	120 17 8¼	401 9 1	269 15 0

The average annual mortality among 2676 of the population, taken promiscuously, would be about 53; whereas the mortality among the Coventry Dispensary patients has been only 23. We must not suppose that the dispensary is saving lives at the rate of thirty a year, for much of this difference of mortality must be attributed to the circumstance of the members of the institution consisting almost entirely of the most frugal, industrious, and prudent of the work-people. Something ought perhaps to be attributed to there being probably a disproportionate number of adult members. "But if we are ever warranted," says Mr Nankivell in a letter to the author, "in ascribing to medical means the saving of life, most surely are we so among the patients of a self-supporting dispensary, where the members have medical advice at the very outset of disease, more promptly perhaps than any other set of persons in the country."'

MINOR ECONOMIC FUNDS.

The Hon. and Rev. S. G. Osborne, of Stoke Poges, Buckinghamshire, has published an account ['Hints to the Charitable.' Price 1s. T. and W. Boone, London.] of several small economic funds, which have been formed in his parish—a large agricultural one—for the benefit of the humbler classes, apparently in a great measure by the active and well-directed zeal of the author himself. They are worthy of notice.

One of these is a *Coal Fund*. The poor in Mr Osborne's district are generally ill off for coal during the winter months; and when the weather is unusually severe, it is found necessary in many parishes to subscribe to obtain for them a portion of that domestic necessary. In Stoke parish, the poor are induced to commence in June paying one shilling a week each into the parson's hands, until twelve shillings have been paid. Coal is there generally from 1s. 1d. to 1s. 5d. a bushel; yet the managers of the fund undertake that each person shall have twelve bushels of coal delivered to him, during the course of winter, at his door, free of all charge (a sack of three bushels being given every three weeks four times). The extra money required is contributed by the benevolent people of the neighbourhood. Charity is here partially employed; but it is to be remembered that the benefit is conferred upon a class who might otherwise be entirely dependent in this respect. Mr Osborne considers it a great matter that the poor are induced to contribute the larger share of the funds: their spirit of self-dependence is encouraged to that extent. The reverend manager of the fund endeavours to save a little in good years, in order to be the more able to succour the poor in bad ones. The poor complain of this, but he waits patiently till a bad year comes to show them the good of the system. In the severe winter of 1837–8, he had £24 in hand. 'We thought the severity of the season such an extreme case, that we ought to do something more than usual for the poor. Accordingly, we took a part of the balance, and bought 114 sacks of coal, some of which we gave away, but sold the greater part at the low price of sixpence a sack. The poor were thus taught the advantage of having saved this balance, and we had the satisfaction of affording a most seasonable relief, without begging for a single sixpence from any one.' It may be presumed that the parties on the coal fund will be more careful of fuel thus obtained than of that which is given them for nothing. 'They can look forward to the winter,' says Mr Osborne, 'with one heavy care for it removed. When the winter comes, with little or any addition, the tired labourer may ever find a comfortable fire at home to spend his evenings by; he is not forced to go to the beer-shop to warm himself.'

The *Wife's Friendly Society* is designed to enable married women of the poorest class to have a small fund which they can draw upon, to defray the expense of a proper medical attendant at their confinements, and furnish some of the comforts required on those occasions. Generally, this class of persons have no provision for such occasions, and the consequences are that they depend on charity, and sometimes suffer from the indifference which the midwives in that case employed are apt to feel where their care is not to be remunerated. A poor woman recommended to the Wife's Friendly Society pays 2d. weekly for a year to the treasurer (the vicar's wife), making 8s. 8d. in all. To this the society from charitable contributions adds 2s. 10d., making 11s. 6d. If she is confined that year, she gets an order for 10s., which serves as payment for her medical attendant. The remaining 1s. 6d. serves to furnish gruel and other little comforts—a small sum for such a purpose, but better than nothing. The person who recommended the member guarantees that, after this payment is made, she will continue to pay her weekly twopences till the end of the year. Should no confinement take place, the money is spent on clothes.

In the case of the *Penny Clothing Fund*, the proportion of charitable contribution is greater than in any other of Mr Osborne's schemes. The object is to encourage the poor to exert themselves to furnish decent clothing to their children. A benevolent person pitches upon some child belonging to a poor neighbour: the patron and the child each pay 1d. weekly into the fund; that is, 8s. 8d. annually. Some persons take two, three, or more children under their care. Mr Osborne speaks of 150 in all his parish being clothed by these means in one year. 'The buying of the clothing is thus managed: a linen-draper attends with his shopman on a given day at the expiration of the year, with a large supply of all such articles of clothing as the poor most need for their children; the school-room is allotted to him as a shop for the day. In addition to the linen-draper, we have a person over from a neighbouring market-town, whose business it is to deal in ready-made clothing and shoes for boys; he has a room adjoining the school for his shop. Each lady (these clubs are almost always wholly supported by the female sex) appears with the children she has put in, together with their parents; they are served in turn, and it is the lady's duty to see that they have their 8s. 8d. worth of goods. The pence are received from the children weekly at the school; from the persons putting them in, at the end of the year.' Clothing for children being one of the things which the poor, amidst the various difficulties which beset them, are least apt to provide for, we can well believe that this fund is likely to do much more good than the practice of presenting blankets at Christmas—a blanket being an article which the parent couple feel the want of pressingly themselves, and are therefore eager to provide from their own means.

The *Endowment Society for Children* is the last of Mr Osborne's parochial schemes which are different from those already developed in these pages. The object here is to make a provision, by small payments, in the course of a few years, for an event connected with a child which will make a small sum of money necessary—as, for instance, to put him (or her) out to service or apprentice him, or to furnish him with tools for his trade when his apprenticeship is expired. One shilling, one and sixpence, and two shillings, are the various sums received, and they may be for two, four, or six years. The principle is the same as in a savings' bank, but the money is devoted to a particular object, and that a very interesting one, and a stimulus to saving is added. The managers of this fund place the money collected in the savings' bank; in the event of the nominated child dying, another is taken, or the money given back.

For further information on these economic institutions, we refer to Mr Osborne's little volume. It may be mentioned that he has published other pamphlets (T. and W. Boone, London) connected with the subject of this sheet, and all of which seem to us well worthy of the attention of those who aim at benefiting the poor by evoking their own best powers in their own behalf. Politically, socially, or morally, a man can be said to fulfil his proper function only when he trusts to his own right arm for the support of himself and family, and leans upon no one save in the general sense in which mankind are all mutually dependent.

POPULAR STATISTICS.

Statistics is a science of comparatively recent date, but it is one which promises to be of considerable service to mankind. Whatever can be ascertained by *taking down numbers and instances, and making summaries of them*, may be said to be a proper object for this science. It is usually applied to such matters as the amount of population, the rate of mortality, the progress of commerce, manufactures, and agriculture, the increase or diminution of crime, the state of education, and the comparative social condition of the several classes which compose any given community. The benefit of coming to correct reckonings about these matters must be obvious; but we shall cite one instance to make it quite clear. From accounts which have been kept of the burials in England for the last fifty years, it appears that the rate of mortality (or number who die yearly in comparison with the whole population) diminished regularly down to 1821, but has since then been a little on the rise; showing that the condition of the people at large (mortality depending on condition) was improving till that time, but has since been slightly declining. When such a fact as this is ascertained, statesmen are put on the alert to discover, and, if possible, remove the causes. Thus it is seen a nation may be much benefited by taking a census, and the keeping of a correct register of deaths. The value of statistical operations, then, is manifest. Statistics may be said to be the account-book of a nation for ascertaining the condition of its affairs. One which keeps no statistical records may be said to be like a merchant who transacts business without keeping a ledger, or ever coming to a balance.

Statistics bears in a similar manner upon many of the interests of private life: of this we trust to be able to give some notable instances in the sequel. It is one of its least utilities, that it tends to substitute real and distinct knowledge in many matters for vague and general impressions. There are many things which, to the uninstructed mind, can only be mentioned to create a feeling of doubt—for example, the comparative likelihood of life in men and women. Ask an uninstructed person whether women or men in general live longest, and, at the best, he will only be able to answer from some obscure notion in his mind, the result of a few observations which he has happened to make. Statistics has ascertained, though only within the last fourteen years, that female life is *better*—that is, of longer duration, than male. Here is a thing which no individual could ascertain for himself, and about which all was doubt for hundreds and thousands of years, settled at last by statistics. We have now the satisfaction of knowing the fact distinctly, instead of only conjecturing, and perhaps wrangling about it.

On some of these vague questions proverbial wisdom is found to have made a conclusion for itself. For example, this oracle has long been clear, that an open winter is the most fatal to life, and that more die of surfeit than of want. Statistics finds both of these, and many like conclusions, to be exactly the reverse of the truth. It has here corrected decided error, which is better still than giving distinct knowledge where formerly there was only doubt. It is observable of almost all such proverbial notions, that they appear to have proceeded upon a principle of contradiction or paradox, the contradiction being generally to what is the most likely conclusion of the mind upon the subject. For instance, want seems at first sight a more deadly thing than over-abundance; but then it is also found, if we pause and look narrowly, that it is possible also to die of cholic and of pampering. The clownish oracle has the same wish to be novel, original, and striking, which is so much the bane of higher and more aspiring philosophy, and it decides that the most mischief is done by the less obvious evil. To put an end to such modes of judging, by adducing the undeniable testimony of figures, is, we humbly submit, a worthy service, and this service is rendered by statistics.

There is one other service which statistics has rendered, of a more remarkable, though perhaps less directly useful, kind than the above. Almost all the occurrences which depend on the human will happen irregularly as to time, as far as an individual is concerned. A man commits some particular crime which he is not likely ever again to commit in his life—for instance, an assault with violence. It was, to all human apprehension, the merest chance which brought him into the circumstances which provoked or prompted him to commit the offence. Yet, strange to say, there is no offence so accidental as to individuals, or so unlikely to occur above once in an ordinary man's lifetime, but what statistics finds it to occur, with the greatest regularity, in a certain range of individuals and within a certain range of time. The returns of a particular crime, in such a country as England or France, are nearly the same for each successive year. In all classes of occurrences which appear occasional as to individuals, the same uniformity is observed when we go to sufficiently large numbers: even in the number of letters put into the post-office without addresses, there is a precise uniformity, if we take the office of a large city, and reckon year against year. Thus to find an order in the most casual of things, even in the wayward and fleeting movements of the mind, affords highly-interesting matter for reflection.

Statistical science has its quicksands and difficulties as well as its triumphs. Often, when an extensive range of facts has been accumulated, all, as is thought, tending to confirm a certain view, there may still be room to contend that they lead to directly opposite conclusions, or that they show the presence of totally opposite causes from those presumed to exist. There is a tendency in those who pursue the science to make inferences in accordance with their own prejudices, or to seek only for facts by which these are favoured: on fact, to pursue the prejudiced system of planting a theory, and then setting out in search of facts to support it, instead of the more philosophical method of first collecting facts from which to deduce a sound and practical conclusion. Such errors are particularly likely to be made in subjects where many causes are presumedly involved, and which are so extensive that it is difficult to command a general view of them. As an example, we have only to remind the reader of the various notions which are usually entertained as to the causes of any distress which may take place throughout the country. The higher class of statisticians usually, however, are cautious in drawing inferences and tracing causes, believing it to be their best course, in all doubtful cases, to restrict themselves to the collection of facts. 'We are employed,' say the members of the Statistical Society of London in their Report for the year 1848–49, 'in narrowing the circle within which the final truths must lie, rather than in an attempt at once to seize them, in which we should fail, to the loss of that credit which is due to our exertions.' In this arduous and commendable labour many individuals are now engaged: Britain has her Office of Statistics; France her Bureau de la Statistique Générale; Belgium her Central Commission of Statistics; and, in fact, all the principal states of Europe have now their central offices in imitation of our own. Without a sustained effort of this kind, correct data can never be accumulated; and without a broad basis of facts, all attempts at generalisation are worse than useless.

BIRTHS.

Proportion of the Sexes.

Many millions of observations have been made upon births in the various countries of Europe, from which one uniform result appears, that about 21 boys are born for every 20 girls. The proportion in different states is here exhibited:—

STATES AND PROVINCES.	Males to 100 Females.
Russia,	108·91
The province of Milan,	107.61
Mecklenburg,	107·07
France,	106·55
Belgium and Holland,	106·44
Brandenburg and Pomerania,	106·27
Kingdom of the Two Sicilies,	106·18
Austrian Monarchy,	106·10
Silesia and Saxony,	106·05
Prussian States (*en masse*),	105·94
Westphalia and Grand Duchy of the Rhine,	105·86
Kingdom of Wurtemburg,	105·69
Eastern Prussia and Duchy of Posen,	105·66
Kingdom of Bohemia,	105·38
Great Britain,	104·75
Sweden,	104·62
Average for Europe,	106·

Further inquiries have shown some curious modifications of the law which seems to preside over this part of the natural economy of the world. In illegitimate births, the over-proportion of boys is somewhat less, nearly approximating in some countries to a par with the number of girls. 'In France,' says Mr Babbage, 'it was observed a few years ago, that out of 6,705,778 persons born, legitimate and illegitimate, there are 3,458,965 males, and 3,246,813 females, or nearly 16 males to every 15 females. Out of 460,391 illegitimate children, there are 235,951 males, 224,440 females. From these data it follows that, in France, for every 100,000 legitimate female children, there will be 106,534 legitimate males; but for every 100,000 illegitimate females, there will be born only 105,128 illegitimate males; so that the probability of a child about to be born being a female is greater if it is illegitimate than if it is legitimate.' It has likewise been found that there is a less over-proportion of boys from marriages in which the husband is the younger party, and in cases also where both parties are extremely young. If the husband, therefore, be much the younger party, we expect his family to consist chiefly of girls; and the same where both husband and wife are much under the age of twenty or twenty-one.

The average fruitfulness of marriages is not clearly ascertained, in consequence of imperfect registrations; but it is considered by Mr M'Culloch to be in England in the ratio of 4 children to each marriage. The accounts of the Registrar-General for the six years ending 1842 give the proportion as 41·56; this, however, is too high a ratio, seeing that it includes illegitimate as well as legitimate births.

Legitimate and Illegitimate Births.

The proportion of illegitimate to legitimate births is a point of great importance in political economy as well as morality, for illegitimate children are generally a burthen to the state, and have an inferior chance of growing up useful citizens. It is also a fact ascertained by statistics, in opposition to common ideas, that such children have generally less of the elements of health and vitality than other children. The proportion of illegitimate to other births is—for France, 1 to 12·5; Prussia, 1 to 13·1; England, 1 to 14; Sweden, 1 to 14·6; the preponderance of morality thus appearing in favour of the two latter countries. In cities the proportions are strikingly different. In Paris, for 28 legitimate there are 10 illegitimate births; in other and stricter terms, the latter are in proportion to the former as 1 to 2·84. In Stockholm, from the report of a recent traveller, the proportion is 1 to 2·3; that is, nearly a third of the children born in that northern capital are illegitimate. In Berlin, the proportion has increased, since 1780, from 1 to 9 to 1 to 6.

Still Births.

The proportion of dead-born to live-born children is found in European cities to be about 1 in 29, but in the country not above half that amount; showing apparently that rural life is most favourable to the health of women during pregnancy and to successful parturition. It is worthy of remark, that more male than female children are still-born; the proportion in Western Flanders has been found as 14 to 10, and the same result appears in some other countries. At Gottingen, in 100 births, 3 were of legitimate, and 15 of illegitimate children.

Effects of Scarcity.

Times of scarcity and privation tend to reduce the number of marriages, and also of births, though generally not immediately. The great scarcity which occurred in England at the commencement of the present century, occasioned a diminution in the number of marriages to the extent of about 18 per cent., as compared with the previous years of abundance. In the Netherlands, wheat was at 9·56 florins per hectolitre in 1816, and the births in the year 1818 had sunk, from a previous higher number (195,362 in 1815), to 183,706: in 1819, wheat had fallen to 3·72 florins per hectolitre, and the births, two years thereafter, rose to 210,359.

MARRIAGES.

The number of marriages per annum in proportion to the population, and the ages at which marriages take place in both sexes, form interesting subjects of inquiry.

In England and Wales, the number of marriages registered was 111,481 in 1837–8; 121,083 in 1838–9; and 124,329 in 1839–40. The number is believed to have been less in the first of these years than it otherwise would have been, in consequence of a popular error which induced parties to hurry on their nuptials before the commencement of the operation of the registration act. Taking the two latter years against each other, we find an increase of 3246 marriages upon the latter; but this is liable to a reduction of 1700 on account of the increase of population; so that, on the same number of people in 1838–9 and 1839–40, there was an increase of marriages, strictly, of about 1500. While there was thus an increase upon the whole country, the greater portion of the manufacturing districts in the west of England, where at this time commercial difficulties existed, showed a *decrease*, amounting in some districts to 6 per cent.; and in Manchester and Salford to no less than 12 per cent.

In England and Wales, the proportion of marriages to the whole population seems to have been diminished during the last fifty years. It is calculated that, in the period 1796–1800, there was 1 marriage annually to every 123 persons; in the period 1816–20, 1 for every 127 persons; in the period 1826–30, 1 for every 128. This seems to be nearly its present proportion.

Some years ago, Mr Finlaison made a calculation of the ages of women at the time of their marriage from an assemblage of 878 cases, which was too small for very satisfactory results. Enlarging the number to 1000 for the sake of arithmetical distinctness, he found the following to be the various ages at marriage:—

Age.		Age.	
14 to 15,	32	28 to 29,	43
16 ... 17,	101	30 ... 31,	18
18 ... 19,	219	32 ... 33,	14
20 ... 21,	233	34 ... 35,	8
22 ... 25,	101	36 ... 37,	2
26 ... 27,	60	38 ... 39,	1

A calculation upon which more dependence may be placed was made by the Registrar-General, upon the basis of 10,019 marriages which occurred in different parts of England in 1838–9, reducing the proportions to 10,000. The following table gives the results:—

Ages.	Men.			Women.			1838-9.	
	Bachelors.	Widowers.	Total.	Spinsters.	Widows.	Total.	Men.	Women.
15 and under 20, . . .	229	...	229	1315	1	1316	327	1416
20 ... ... 25, . . .	4990	47	5046	5042	87	5090	5226	5202
25 ... ... 30, . . .	2397	170	2567	1879	120	1999	2267	1772
30 ... ... 35, . . .	754	222	976	568	158	726	819	659
35 ... ... 40, . . .	262	191	453	244	132	376	451	385
40 ... ... 45, . . .	113	167	280	108	138	246	323	276
45 ... ... 50, . . .	46	134	180	53	73	126	212	157
50 ... ... 55, . . .	18	95	113	14	57	71	144	78
55 ... ... 60, . . .	8	59	67	11	24	35	81	35
60 ... ... 65, . . .	5	63	68	1	29	30	30	12
65 ... ... 70, . . .	...	26	26	2	8	10	8	8
70 ... ... 75, . . .	1	4	5	...	3	3	8	...
75 ... ... 80, . . .	...	5	5	...	1	1	2	...
80 ... ... 85, . . .	...	4	4	...	...	...	...	...
Totals, . . .	8852	1167	10,019	9238	781	10,019	10,000	10,000

According to the preceding table, the average age of marriage in England is—for men, 27·4 years; for women, 25·5 years. It presents, upon the whole, a favourable view of the prudence of the English people as to marriage. Only 2·3 per cent. men, and 13 per cent. women, are wedded under the age (legal non-age) of 20. About one-half of both sexes are married between 20 and 26. Only about three-fourths of a per cent. of first marriages are contracted by either men or women after they reach the age of 44.

It seems to be clearly ascertained, that the tendency of the sexes to marriage is liable to be modified by a number of conditions. Above a certain point in education, comfort of circumstances, and respectability of position, the tendency diminishes, and we see men and women of the middle and upper classes living contentedly in celibacy, from a dread of the increased expenses of matrimonial life. Below that point, the tendency increases, from opposite causes. It is observably more powerful amidst a dense operative population than amongst a scattered one, and it reaches its extreme in the half-destitute class, however otherwise circumstanced. Statistics affords us some information respecting two widely-separated parts of the earth, one of which is remarkable for early and numerous, and the other for rare and long-delayed marriages—Glasgow and the parish of Montreux in Switzerland. In Glasgow, the marriages were, in 1839, in the proportion of 1 to 112 of the population; and this ratio rises much higher in unusually prosperous years, as, for instance, in 1825, when it was 1 in 84. Montreux is too small a district to afford basis for a calculation of this kind; but the people, who are all small labouring proprietors, are remarkable for postponing marriage to a late age, the average ages of men and women being 30 and 26·75 respectively. In Montreux, the births are as 1 to 46 of the population, and the deaths as 1 in 75, both uncommonly favourable proportions. Those of Glasgow will be found very different. It seems incontestable, indeed, that a multiplication of marriages in most situations is attended by an increase of mortality, and particularly an increase in the mortality of the young during the first years of childhood. We trust we may here venture upon a few general remarks of a social tendency with respect to marriage amongst the industrious orders.

It is a familiar saying among the industrious orders, that 'the mouth never comes without the meat for it;' by which they encourage themselves to marry, or console themselves when, having married, they find their family increasing upon them more rapidly than they can well see how they are to provide for it. This fallacy has been in some measure brought to the test of figures. Dr James Philips Kay, an assistant Poor-Law Commissioner, instituted in the year 1836 an inquiry into the actual income of agricultural labourers in the counties of Norfolk and Suffolk. Returns to the circulars which he issued for this purpose enabled him to make the following abstract of the annual earnings of 539 families:—

	Average annual income.
36 single men, ...	£25 1 4½
64 married men, with no children at home, .	30 12 10½
166 married men, with 2 7-8ths children, all under 10 years of age, . . .	32 13 2
120 married men, with 3 7-10ths children, 1 of whom above 10 years, . . .	35 9 0½
92 married men, with 4 9-10ths children, 2 of whom above 10 years, . .	40 10 1
44 married men, with 5½ children, 3 of whom above 10 years, ...	45 11 9½
15 married men, with 7 children, 4 of whom above 10 years, . . .	50 18 6
1 married man, with 5 children above 10 years,	42 13 0
1 married man, with 6 children above 10 years,	53 0 0

The first question suggested by this table is—How much of the increased income of the men with families was owing to their working more steadily, from a sense of their families being dependent upon them? and how much to the earnings of their wives and children flowing into the common stock? This does not directly appear, but the returns afford means of arriving pretty near the truth by calculation. Out of the 539 male heads of families, 475 earned annually by daywork £7382, 5s. 2d., which gives the average annual earnings of each man by this means at £15, 10s. 10d., or within a fraction of 6s. a week. The earnings by taskwork are specified in 350 cases, and amount in all to £5018, 17s. 7d., which gives the average earnings of each man by this means at £14, 6s. 10d. annually, or 5s. 6d. a week. There are enumerated at least 286 cases in which the labourer obtained earnings in both ways; but it would give too high an average to add the two sums together. We are enabled to approach to the truth in another direction, by deducting the amount of earnings said to be made by women and children from the average incomes of the families. The sum of all the annual earnings of all the families (counting each single man as a family), in the table given above, is £19,129, 16s. 5d.; and this gives an average annual income of £35, 10s. The men are stated to have earned on an average £5, 8s. by harvest work, in addition to their regular wages: the average earnings of wives are about £2, 12s. 7d.; of children able to work, £8, 1s. 11d.; and the value of gleanings by the younger children is £1, 1s. 10d. Deducting these sums from the average family income, leaves £17, 4s. 4d. for the average annual earnings of the man by ordinary task and daywork; and this, when we take into consideration the number of men, and the amount earned in the year by these routine kinds of labour, seems by no means an improbable estimate. This £17, 4s. 4d. added to the £5, 8s. of harvest wages, gives £25, 12s. 4d. as the average annual earnings of a man (7s. 3d. per week), or only 13s. more than the average earnings of the unmarried men; from which we infer that *the additional income of the married men is derived from the labour of their wives and children.*

Deducting the earnings of the unmarried men from the whole amount, and dividing the remainder by

the number of married men, we get an average of £36, 7s. 2d. for the annual earnings of each married man and his family. But whereas the £25, 1s. 4½d. is allotted exclusively to the maintenance of one person only, the income of £36, 7s. 2d. has to provide for an average of 5·5 persons. Unless the married man can support a wife and 5·5 children upon £11, 5s. 9½d. per annum, he must dispense with luxuries, comforts, it may be conveniences, in which the unmarried man can indulge. And the average income is raised to this height by taking into account those families which, having three, four, five, and six children above ten years of age, have an average income of about £45 per annum. To reach this highest grade, even they must have passed through years of greater pinching, when their children were growing old enough to take care of themselves and earn a little. The mill through which they have been ground may be conceived by taking into account these facts. The average annual earnings of a wife with no children were £3, 8s. 9d.; of a wife with 2¾ children under 10 years of age, £2, 9s. 10¾d.; of a wife with 3 1/16 children, one above 10, £2, 11s. 7¾d.; of a wife with 4 1/16 children, two above 10, £2, 5s. 7¼d.; of a wife with 5¾ children, three above 10, £2, 19s. 1d.; of a wife with 7 children, four above 10, £2, 3s. 10d. From which it appears, that a woman with a family is only able to earn about two-thirds of what a woman without that encumbrance can earn. The earnings of the children also fall to be taken into account. In families with 2¾ children, none of whom were above 10 years of age, the average annual earnings of each child were 15s. 3¾d.; in families with 3 1/16 children, one of them above 10, the average earnings of each child were £1, 1s. 9½d.; in families with 4 1/16 children, two above 10, the average earnings of each child were £1, 13s.; in families with 5¾ children, three above 10, the average earnings of each child were £2, 2s. 5¾d.; in families with 7 children, four above 10, the average earnings of each child were £2, 17s. 8d. An additional head of income must, in strict accuracy, be mentioned—namely, the value of corn gleaned by the children. As might be expected, the amount increases with the number of children; but as the age of the latter does not much affect their ability to glean, the increase is very gradual, and of small amount:—

VALUE OF CORN GLEANED.

Families.	Average Annual amount to each Family.
46 with no children,	£0 17 10½
110 with 2 7-8ths, all the children under 10,	0 18 7½
97 with 3 7-10ths, one child above 10,	1 0 6½
85 with 4 9-10ths, two children above 10,	1 5 6½
37 with 5 3-4ths, three children above 10,	1 9 6½
13 with 7, four children above 10,	1 6 9½

These figures demonstrate that the married labourers incurred in general an additional amount of expenditure, which their additional income by no means compensated. The *kind* of expense incurred by the married men, as well as the amount, is different—childbed outlay, education of children, and the increased chances of sickness as the numbers of a family increase. It must be remarked, too, that the cases selected to illustrate this point are, in so far as the unskilled labourers of the country are concerned, favourably circumstanced. Of the 539 families enumerated, 397 had gardens (averaging 19¼ rods); 136 had some fuel free of charge; 259 had each a pig; and 20 each a donkey. The average of their house-rent (£3, 11s. 4½d.) did not rise above the average level throughout the country; while in a rural district provisions are cheaper than in towns. Above all, the engrossment of their parents' attention by labour was not so dangerous for the children as in densely-populated towns, where, when left at all to themselves, they are in constant danger of falling in with instructors in crime, and are placed in a situation where greater opportunities present greater temptation. If, then, among individuals who, for the class to which they belong, may be considered in easy circumstances, marriage be a step which must render increased exertions and self-denial necessary, what must it be for those who are in more difficult circumstances? Let the experience of a committee appointed in Glasgow in 1837, to afford relief to the industrious poor in a season of severe pressure, answer the question:—

Out of 3072 adult males who applied for relief and were furnished with work, 2273 were married. The number of the children of those married applicants was 6302, or nearly 3 children to each family. No less than 532 of those married men were under 30 years of age: of the children, 3994, or nearly two-thirds, were under 10 years of age. Of the 2273 married men, 2171 were weavers; and the account given by Mr Charles Baird, in a paper read before the Statistical Society of London, in February 1838, of the condition of that class even in times of no extraordinary pressure, may serve to show with what prospects they had rushed upon the hazardous responsibilities of marriage:—'The great bulk of the weavers in Glasgow and its suburbs,' says he, 'are in extreme poverty. Their wages which, even in 1819, were as low as 12s. gross, or 10s. 8d. nett (the deductions being for loom-rent, winding, &c.), now average only 8s. 4d. gross, or 7s. nett per week; and even for this miserable pittance they are obliged to work from 14 to 16 hours per day. Their houses, which are generally in the suburbs, are of the poorest description, barely furnished, and the food and clothing of the inmates, as might be expected, not only of the plainest description, but also quite inadequate.' It is apparent, that they who, in the best of times, can barely procure a subsistence by 14 or 16 hours of daily toil, must, by the slightest and shortest stagnation of trade, be reduced to destitution, and, under such circumstances, to incur the charge of a family is madness.

This is a consideration which has of late been much urged upon the poorer classes—not always, it is to be feared, in the most judicious manner. Leaving out of view that the deductions of Malthus (see POPULATION, No. 83), whose disciples have been the most busy in giving this kind of advice, are based upon statistics remarkable both for vagueness and inaccuracy, and tainted by the polemical bias of his mind when he first published them, the form in which they have generally been submitted is of all others the least calculated to make an impression upon uneducated minds. Abstract reasoning, geometrical and arithmetical ratios, convey no tangible ideas calculated to influence their conduct; and the subordinate discussions into which some of these philosophers are fond of diverging, repel by inspiring disgust. Advice may be sound, however, although it be given in an uncouth form and by unamiable persons. In regard to improvident marriages, the industrious poor would do well to consider.

Marriage has its attractions, and, what is more, its moral advantages. It is the only institution which reconciles with the stability and good order of society one of the strongest impulses of our nature. If it add in some degree to a man's expenditure, it repays him by conferring blessings unattainable without it. The unmarried man is isolated; the married man, if ordinarily well-conducted, has a permanent hold on the affections of a portion of his fellow-creatures. A judicious selection of a helpmate ensures him comforts at home which no price could otherwise secure for him. If he act wisely, he will find his family affections the best of moral teachers. The state of marriage is honourable, and is desirable. And now let us turn to the considerations which every man, properly desirous of entering such a state, ought to weigh duly beforehand:—It is mainly by her domestic industry that he ought to expect his wife to contribute to his comfort—by her judicious aid in making what he earns to go as far as possible. She may at first have some time to spare for earning, but when a family comes upon her, that and the household together will take up by far the greatest part of her time. Children must for a time be a mere draft upon his industry. Great and just complaints have been raised of the ex-

treme labour exacted from infants in factories. Granting that the employers of such infants are culpable—what are their parents? The father who allows his child to be precociously employed in labour beyond its powers, calculated to destroy it physically and morally, and render all its future life one long disease, is consenting to the crime. There is no legal pressgang to sweep children into factories. A conscientious man, who contemplates marriage, will take these facts into consideration, and ask himself whether his position and prospects are such as entitle him to expect to be able to support a wife and children as they ought to be supported, for a number of years. He must estimate the possible earnings of his wife at a very low figure—as something that may at times enable them to indulge in an extra luxury, but not as contributing to the necessary household expenses. He ought to assume that his children, before their tenth year, will earn nothing, and that for some years after their earnings will amount to a mere trifle. The sources of his income being thus ascertained, he must next look his expenses fairly in the face. It is a duty he owes to himself and society to aim at procuring for himself a sufficient allowance of nourishing food, comfortable clothing, the means of preserving cleanliness, so requisite to health, and weather-tight, well-ventilated lodgings, with the necessary fuel. The same comforts which he aims at for himself, he becomes bound to procure for her whose time after their union ought to be mainly directed to caring for the comforts of him and his children. And for those children he is bound, by every natural feeling, to provide while they are unable to provide for themselves, in such a manner that they shall start upon life with hale constitutions and a fair elementary education. From his knowledge of his own expenses as a bachelor, and from what he can learn of the expenses of his married neighbours, he can form a tolerably near estimate of what marriage is likely to cost him. He must take it for granted that unforeseen accidents are more likely to occur in a family consisting of two, three, or four, than in a family consisting of one; and on this account ought not to venture on the married state unless he or his intended has some little stock of sparings laid up in the event of contingencies. This being provided for, he must next take into account whether his earnings can cover the certain steady outlay of a family, and deposit a trifle at intervals in the savings' bank; and whether there is a fair prospect of their continuing to increase, and at least not to fall off. If every prospect is favourable, he may take the step; if not, he incurs the almost certain danger of reducing himself and his family to a state of destitution—of increasing by his rash act the number of sufferers in society—of adding to the number of that class which is at once miserable in itself and the cause of misery to others.

When we ask all who have not a reasonable prospect of being able to rear and instruct a healthy family to abstain from marriage, we only ask of them to consult their own happiness; the benefit of their abstinence will be reaped by society at large as well as themselves; the bad effects of their rashness will be felt by society as well as themselves, but the deepest, bitterest dregs of the harsh draught will fall to be drained by them. We only ask them to submit to a necessity which it is in vain to struggle against. If they ask why they are to deny themselves a gratification which they see others indulge in, the answer is, for the same reason that they forego many other pleasures they may wish for, but cannot earn by honest industry. Marriage is a fruitful source of happiness when judiciously set about; but, like all other goods of this life, it must be earned, and those who are not in a condition to earn it (whether for want of employment or want of ability), ought in conscience to forego it. To rush blindly upon the cost of marriage, without forethought, encouraging their rashness by such groundless remarks as, 'When God sends mouths he sends meat,' is not even to snatch a pleasure they have not had it in their power to earn, for such inconsiderate matches have more of a curse in them than of a blessing. A bachelor state may be less happy than a good marriage, but it is better than a rash one, which precipitates all parties into destitution.

It is the more necessary to impress the importance of the lesson, 'Learn to abstain,' because it is the most difficult to practise, on account of the strength of the impulse to be overcome, and the weakness of those subjected to it, from its reaching its intensest power at an age when the judgment is yet immatured and experience empty; and also because rash marriages are the great promoters of a destitute, and consequently a demoralised, unhealthy, and miserable population; and because the man who has taught himself, by struggling against inclination, to make his instincts bend to his reason in this matter, has strengthened himself to resist almost any other temptation. It is men (and women too) who know how to earn and how to practise self-denial—who know what it is to appreciate pleasures, but are able to reconcile themselves to abstinence—in whom inclination and will are under the control of judgment and reflection—who constitute the sound and useful portion of society. In proportion as this class preponderates, will it be possible to keep the healthiness and morality of the community at a high average.

DEATHS.

A human being born with a sound constitution is calculated to live seventy years or upwards, under favourable circumstances; but, as we well know, all of us are surrounded more or less by circumstances unfavourable to life, by which, practically, our term of years is liable to be greatly shortened. Existence, as to duration, is proverbially the most uncertain of all things; and this because, from ignorance, incautiousness, and accidents, life is constantly coming into collision with the conditions calculated to destroy it. The conditions unfavourable to life come into operation, we have seen, before the human being has seen the light. They continue in operation throughout the whole of its appointed period; so that, out of any large number born, a certain proportion die in the first year, a certain proportion in the second, the third, and so on, until all are gone—only a certain comparatively small number attaining the full age which nature promises to sound life maintained in favourable circumstances.

The conditions necessary for healthy and protracted existence are institutions of Almighty wisdom; they are briefly enumerated in the article PRESERVATION OF HEALTH (No. 45), to which we refer. They vary in different countries, according to climate, civilisation, and political arrangements; and, as necessarily follows, are different in the same country in different ages.

Table of Mortality for England.

During the eighteen years from 1813 to 1830, there were registered as buried in England and Wales 3,938,496 persons, of whom 1,942,301 were females. The ages of all these persons were, as far as possible, ascertained and stated; so that it was possible by these means to ascertain the rate of mortality at the different ages, for that period, and in that country. The table consequently formed is given at the top of next page.

It appears from this table, as it has done from others constructed in other countries, that while the births of males to females is as about 21 to 20, the deaths are in an opposite relation; that is to say, female life in general is of longest duration.

Mortality at Various Ages, and Expectation of Life.

The great mortality of the early periods of life is very remarkable. One-fifth of the whole of the children born in England and Wales, appear from the above table to die in their first year. (A Belgian table represents no less than a tenth of the entire mortality as taking place in the *first month of life*.) The disproportion between the deaths of males and females, appears also to be greatest under the fourth year; a fact which confirms the common remark as to its being more difficult to rear boys than girls, and which, it may further be observed, is in harmony with the disproportion of still births.

Age.	Males.	Females.	Both.	Age.	Males.	Females.	Both.	Age.	Males.	Females.	Both.
Under One Year.	402,946	341,127	772,073	40	16,269	17,264	33,513	80	22,695	24,951	47,617
1	129,426	127,017	256,443	41	10,083	10,066	20,149	81	18,146	16,279	27,425
2	78,114	75,900	154,014	42	13,433	14,075	27,508	82	15,235	17,922	33,166
3	47,260	46,773	94,033	43	10,838	11,480	22,317	83	12,072	13,721	25,793
4	32,695	32,676	65,369	44	12,289	12,668	24,957	84	15,920	18,477	34,397
5	24,584	22,340	46,194	45	15,523	14,548	30,060	85	12,245	14,187	26,432
6	19,576	18,091	37,467	46	12,601	12,334	24,935	86	8,254	10,437	19,291
7	16,467	14,668	31,135	47	12,633	12,163	24,796	87	7,070	8,489	15,539
8	13,895	12,363	26,258	48	13,981	13,280	27,261	88	6,722	8,285	15,007
9	12,671	11,270	23,941	49	13,283	11,486	25,069	89	4,462	5,637	10,106
10	11,610	10,527	22,137	50	17,468	16,089	33,557	90	4,549	6,624	11,173
11	10,441	9,777	20,218	51	10,792	10,119	20,911	91	2,958	3,057	5,350
12	9,996	9,800	19,796	52	14,544	13,875	28,419	92	2,023	2,877	4,905
13	9,868	10,081	19,949	53	13,020	12,642	25,662	93	1,398	2,258	3,656
14	10,889	11,790	22,679	54	13,148	12,346	25,494	94	1,129	1,385	2,514
15	10,996	12,527	23,623	55	16,908	15,209	31,512	95	977	1,582	2,559
16	11,885	13,737	25,122	56	15,798	14,489	30,284	96	715	1,182	1,897
17	12,563	14,212	26,780	57	14,067	13,995	27,062	97	494	846	1,340
18	14,212	14,998	29,210	58	14,287	13,414	27,701	98	426	708	1,134
19	15,144	16,061	31,205	59	13,479	12,283	25,762	99	267	495	762
20	15,345	16,041	31,386	60	21,845	21,428	43,273	100	239	468	707
21	15,824	16,247	32,071	61	13,533	12,551	26,084	101	133	225	358
22	16,188	17,597	33,785	62	16,693	16,253	32,946	102	70	174	244
23	14,850	16,803	31,653	63	18,631	16,282	35,913	103	63	134	197
24	14,515	16,722	31,237	64	17,761	17,639	35,390	104	41	90	131
25	14,569	16,586	31,155	65	18,911	18,723	37,634	105	29	72	101
26	13,785	16,318	30,103	66	20,160	20,353	40,492	106	17	29	46
27	13,623	16,133	29,756	67	19,522	19,[illegible]	39,875	107	13	21	34
28	13,778	16,272	30,050	68	18,315	18,298	36,613	108	10	18	28
29	12,199	14,431	26,630	69	16,816	16,222	33,038	109	6	12	18
30	14,513	16,514	31,027	70	26,187	27,766	53,953	110	7	11	18
31	10,388	11,963	22,301	71	16,008	16,154	32,162	111	2	3	5
32	12,597	14,427	27,024	72	21,085	21,868	42,953	112	1	1	2
33	12,400	14,227	26,636	73	20,562	21,363	41,925	113	1	1	2
34	11,606	13,279	24,884	74	20,652	21,163	41,815	114	0	2	2
35	13,741	15,200	28,941	75	21,936	22,594	44,530	117	0	1	1
36	13,224	14,959	28,184	76	19,595	20,522	40,117	118	1	0	1
37	11,873	13,409	25,282	77	21,012	21,845	42,857	119	1	0	1
38	12,519	14,268	26,787	78	19,595	21,030	40,625	120	2	1	3
39	11,167	12,611	23,778	79	15,576	16,433	32,009	124	1	0	1

From a table of mortality, a calculation is easily made with regard to the probable duration of the life of any person. The calculation is made, with regard to any particular age, by adding up, in a table of mortality, all the deaths after that age, and dividing the sum by the numbers living at that age. The quotient is the *expectation of life* of a person of that age. A table of the expectation of life, for service in life-assurance and annuity business, is formed by doing this with regard to every age, and putting the whole in proper succession. We here present such a document, formed from the above mortality table, but only showing the expectation at every fifth year; joined to which is a similar table formed from the Million Tontine of 1695, and indicating very clearly the improvement of life in England during the last hundred years:—

Age.	Million Tontine of 1695.		Parish Registers, 1815-1830.	
	Expectn. Males.	Expectn. Females.	Expectn. Males.	Expectn. Females.
Under 1 year,	37·61	...	39·96	43·20
1 year,	38·49	43·65	47·78	50·14
5 ...	39·93	42·44	49·80	51·29
10 ...	35·71	40·43	46·83	[illegible]
15 ...	32·05	37·22	43·08	[illegible]
20 ...	29·34	34·25	39·65	40·69
25 ...	27·96	31·67	36·33	37·64
30 ...	26·27	28·98	33·24	34·43
35 ...	24·12	26·33	30·03	31·51
40 ...	21·74	23·65	26·75	28·33
45 ...	19·15	20·62	23·49	25·14
50 ...	16·66	17·78	20·31	21·83
55 ...	14·32	15·46	17·19	18·51
60 ...	11·45	13·25	14·20	15·29
65 ...	9·30	10·23	11·43	12·32
70 ...	7·19	7·79	8·94	9·67
75 ...	5·61	5·56	6·78	7·33
80 ...	4·22	3·79	5·05	5·46
85 ...	2·93	3·00	3·65	4·22
90 ...	2·01	2·54	3·42	3·70
95 ...	1·18	1·94	3·05	3·22
100 ...	0·00	0·00	2·78	2·72
Sums of ages,	270·08	411·37	474·30	495·70

Diseases.

Of the specific causes of mortality, it is difficult to procure anywhere a proper estimate, on account of the imperfection of most systems of registration, and particularly the want of precision and uniformity in naming various diseases. The system of registration now established in England is conducted upon enlightened principles, and appears to have hitherto been managed with great regard to correctness. It has enabled its able director, Mr Farr, to draw up very minute and comparatively satisfactory tables of the fatality of diseases in England and Wales for several recent years. The registered deaths of 1838 were 342,529, of which 175,044 were of males, and 167,485 of females. The causes of death were assigned in 330,559 instances; assuming that the other cases might be distributed proportionally among the assigned causes, a table was constructed, of which the following is a summary:—

No.	Diseases.	Males.	Females.
1.	Epidemic, Endemic, and Contagious Diseases,	29·860	30·716
	Including *Small-Pox*,	5·125	4·710
	Including *Typhus*,	5·506	5·861
2.	Diseases: Of the Nervous System,	16·084	15·999
3.	Diseases: Of the Respiratory Organs,	27·118	27·859
	Diseases: Including *Phthisis*,	16·033	19·194
4.	Diseases: Of the Organs of Circulation,	1·205	·945
5.	Diseases: Of the Digestive Organs,	5·066	5·709
6.	Diseases: Of the Urinary Organs,	·793	·193
7.	Diseases: Of the Organs of Generation,	·006	2·008
8.	Diseases: Of the Organs of Locomotion,	·647	·623
9.	Diseases: Of the Integumentary System,	·153	·099
10.	Of Uncertain Seat,	12·974	13·805
11.	Old Age,	9·637	11·926
12.	Deaths by Violence,	5·107	2·127

The healthy occupations of the country make a difference in its favour in the general mortality; but this appears larger than it really is, in consequence of the flocking of the worn-out and miserable to large towns, and the occasional resort of sick persons thither for the sake of medical attendance, in the course of which life is in many instances cut short. In 1838, out of equal numbers in town and country, the deaths in the former appeared to be 101,019, and in the latter only 70,410. The average of life in the country would thus seem to be 50, and in the city 37; but if the above modifying causes are taken into account, the disproportion must be deemed considerably less. As might be expected, diseases are of different fatality in country and in town. Taking similar amounts of population in each, Mr Farr found that, for 1·00 in the counties, there were in the cities, 'by asthma, 3·80; erysipelas, 2·71; convulsions and teething, 2·57; cephalitis and hydrocephalus, 2·41; hydrophobia, 2·37; pneumonia, bronchitis, and pleurisy, 1·99; delirium tremens, 1·98; typhus, 1·88; small-pox, 1·73; heart disease, 1·73; childbirth, 1·63; syphilis, 1·59; rheumatism, 1·58; gout, 1·55; hernia, 1·48; purpura, 1·46; sudden deaths, 1·45; liver disease, 1·45; hepatitis, 1·35; tetanus, 1·32. The excess of mortality in cities was of less amount in the following cases:—By consumption, 1·24; croup, 1·23; violent deaths, 1·17; stone, 1·11; mortification, 1·10; malformations, 1·07; apoplexy, 1·07; hæmorrhage, 1·02.' Of some other diseases, the fatality was greatest in the counties. The 'mortality to 1·00 in the counties was, in the cities, by paralysis, ·99; dropsy, ·99; jaundice, ·99; diabetes, ·97; cancer, ·92; hydrothorax, ·88; hematemesis, ·79; debility (frequently premature birth), ·75; atrophy, ·73; scrofula, ·46.'

London is, upon the whole, healthy for a large city, the annual mortality being 1 in 42 of the population—a proportion very little above that of England and Wales (1 in 46). But the general healthiness of London is in some measure deceptive. It contains districts and kinds of population widely different; and the effects of wealth, spacious accommodations, and comparative cleanliness at the west end and in the suburbs, makes up in a summary for the opposite conditions of the eastern parts. This is rendered clear by the following statement:—

	Annual Deaths per cent.	Or
Whitechapel,	3866	1 in 26
St George's, Southwark,	3297	1 ... 30
Bermondsey,	3123	1 ... 32
St Pancras,	2038	1 ... 49
Camberwell,	1925	1 ... 52
Hackney,	1836	1 ... 54

It is to be observed that all these results rest, not upon the population as actually known, but as computed hypothetically from the census of 1831. Their accuracy of course cannot be entirely depended on, but they may be received as good approximations. The effect of crowding is shown by a table, exhibiting the mortality, and the number of square yards of space to each person in three groups of metropolitan districts.

	Square Yards to each Person.	Annual Mortality.	Mortality from Typhus alone.
1st group of ten districts,	35	3428	349
2d " " ...	119	3786	181
3d " " ...	180	2[illegible]9	131

Hence we perceive that typhus is nearly three times as fatal in the first or crowded group as in the third or open one.

Glasgow is believed to stand lowest amongst British cities in point of health, and for some years its unhealthiness seems to have been steadily on the increase. In 1831, the rate of mortality was 1 in 39 and a fraction; in 1831, it was 1 in 30 and a fraction; in 1838, 1 in 26 and a fraction. In 1821, the deaths of children under ten years of age in this city were 1 in 75; in 1839, they were a little under 1 in 48. The extreme mortality of Glasgow is readily accounted for by the existence of a vast horde of miserable people in the meaner and closer parts of the city. Mr Symons, an English gentleman who had taken pains to make himself personally acquainted with the subject, states as follows:—'It is my firm belief that penury, dirt, misery, drunkenness, disease, and crime, culminate in Glasgow to a pitch unparalleled in Great Britain.' This class becomes a focus of typhus fever and other pestilential disorders, which emanate from it to the rest of the inhabitants, and generally prove very fatal. In 1839, the deaths from typhus fever alone reached 2180. It may be remarked that statistical science, which has been cultivated to an unusual degree in Glasgow, gives an unfavourable view of the city in a number of respects. In the five years previous to 1831, the average births in Glasgow were 1 to 29·47 of the population; the burials 1 to 30·91; and the marriages 1 to 105; the respective average numbers for entire England during the same period being 1 to 37, 1 to 54, and 1 to 129. It thus appears that there are in Glasgow more marriages, more births, and *more deaths* than in the country generally. In the parish of Montreux, where the births are 1 to 46 of the population, nineteen out of twenty complete the first year of life, and very nearly four-fifths of those baptised have been observed to live to receive the sacrament of communion.

A similar correspondence between many marriages, many births, and many deaths, is shown in the returns from Liverpool, as appears from the following passage in Dr W. C. Taylor's work, 'England in the Nineteenth Century:'—'The site of Liverpool is low, and we regret that, upon examining the returns of the population for 1841, and comparing them with those of the births, marriages, and deaths, we should have found such a startling result—a result not so surprising to us as it would be had we not seen some of the older returns. In 1662, the baptisms were 30, and burials 30; in 1700, as above, the former 131, the burials 125; in 1800, the baptisms 3033, burials 3157. The births registered in 1839, when a close approximation to correctness in the returns took place, were 7128, deaths 7437; in 1840, with a population of 223,054, the returns showed 9990 deaths to 9925 births. We then went farther, and made calculations upon a basis every way favourable; for we applied to the Population Returns of 1841 the Registrar-General's return of births and deaths for 1840 in Liverpool, consequently we applied them to nearly the tenth part of a clear increase more than we ought, and the result, compared with the totality of England exclusively of Wales, made from a table in which the decimal surplus population was deducted from England alone, gives the following figures:—

	Births to Population.	Deaths to Population.	Marriages to Population.	Births to Marr.
Population of all England reduced to June 30, 1840, 14,767,751.	1 to 31·07	1 to 44·45	1 to 125·29	4·03
Liverpool, 223,054,	1 ... 22·47	1 ... 22·42	1 ... 60·6	2·6

'Here are startling anomalies,' remarks Dr Taylor; 'double the deaths and marriages, and little more than half the number of births [to a marriage], averaged in the totality of England.'

Effect of Seasons.

Seasons affect mortality very considerably. We have already adverted to the popular notion that a mild winter is the most fatal to life, and mentioned that it is the reverse of the fact. Severe weather in reality affects life to a much greater extent, particularly in some classes of ailments, than could be supposed likely. One table, prepared from the Belgian registers, shows a surprisingly gradual decline of mortality as the spring and summer advance, and then an equally gradual increase towards the middle of winter, the influence being rather more marked in country than in town:—

Months—1838 to 1842.	Deaths.	
	Town.	Country.
January,	59,898	116,129
February,	55,267	114,728
March,	54,277	116,344
April,	51,818	107,304
May,	49,211	93,714
June,	46,607	84,464
July,	45,212	77,555
August,	47,032	76,802
September,	50,191	85,121
October,	51,649	89,514
November,	52,908	99,585
December,	55,631	98,705
Average,	51,700	95,832

In 1838, the weather at the commencement of the year was more than usually cold, and in certain classes of diseases the mortality of that year in the metropolis for the different seasons was as follows:—

Causes of Death.	Winter.	Spring.	Summer.	Autumn.
Paralysis,	224	181	135	187
Apoplexy,	299	241	201	246
Asthma,	700	225	97	331
Hydrothorax,	90	73	43	79
Bronchitis, Pleurisy, Pneumonia,	1609	870	545	1154
Influenza,	31	18	3	11
Diseases of the Heart, &c.	273	150	177	211
Diabetes,	12	4	1	6
Dropsy,	501	497	375	465
Mortification,	94	50	35	56
Sudden Deaths,	216	165	105	146
Old Age,	1353	969	778	981

The disproportion, it will be observed, was greatest in diseases of the respiratory system, which, of course, was that most liable to be affected.

Effects of Wealth and Civilisation.

The progress of wealth and civilisation takes a prominent place among the conditions either causing or accompanying a reduction of mortality.

The number of deaths that occurred in the city of London in 1697, was 21,000; a century later, in 1797, the number was only 17,000, notwithstanding the increase of the population. About the middle of last century, the annual mortality in the same city was as high as 1 in 20; in 1830, it was 1 in 41. Of course, in the metropolis of a great nation, an increase in the number of inhabitants is not necessarily a proof that the indigenous population is increasing; but the average of deaths being in London 1 for every 41 inhabitants in 1830, and the average of *registered* baptisms (everywhere in this country less than that of births, and most of all in London), being in the same year 1 in every 31, we know that, independent of the increase from immigration, the population of London has been steadily augmenting. The statistics of the city of Amsterdam present a remarkable contrast to this picture. In 1727, the annual average of mortality was 1 death for every 27 inhabitants; and the average for the twelve years preceding 1832 was the same. During these twelve years, too, the average of deaths in a year was 7336; the annual average of births only 7282. If during that period the population of Amsterdam did not positively decrease, it must have been kept up by immigration.

There is another point of difference in the career of these two cities for a century back. Whilst the wealth of London has been increasing almost in a geometrical ratio, the commerce of Amsterdam, and with it the opulence of the city, has been diminishing. Here, then, we have two striking examples of an increase in the mean value of life attendant upon augmented wealth, and, at the least, a stationary condition of that mean value attendant upon a diminution of commercial prosperity. The analogy is marked, and not surprising, between the fortunes of communities and individuals; in both cases, opulence (that is, the comforts of which opulence gives command) has a tendency to improve the general health and prolong life. This, however, is taking but a superficial view of the question; to enable us to turn such knowledge to account, we must go more closely to work, and examine in what manner the beneficial change is produced. If we do this, there are facts established by the statistical inquiries which have of late years been made in Europe (although the science of statistics can scarcely be considered as far advanced beyond its mere infancy), which will show us that the increased wealth of a community is rather an attendant upon its increased health than a cause. They are both mutually causes and consequences—both the results of advancing civilisation, and both contributing to carry on that civilisation to a yet higher pitch. A recapitulation of some of the most striking circumstances either attendant upon, or productive of, the increasing health of a community, will be found fraught with useful practical lessons.

The ascertained facts regarding the rate of mortality in our own country, since the commencement of the reign of George III., invite to investigation. 'The annual number of burials,' says Mr Rickman, in the preface to the Population Returns of 1841, 'as collected in pursuance of the population acts, authorises a satisfactory inference of diminished mortality in England; the average number of burials not differing materially from the year 1780 to the year 1815; the first five years of that period, the last five years, and the whole period of thirty-six years, giving the same average result of 193,000 registered burials, the population having increased 3,300,000 in the meantime.' It appears from a subsequent part of the preface, that the annual mortality in 1780, as near as could be ascertained, was 1 in 34 or 35 of the population; that in 1820 it was 1 in 49. On the other hand, the same authority states—'The mortality of the inhabitants of England appears to have sunk to its *minimum* in the decade preceding the population abstract of 1821; and since that time it seems to have risen as fast as it descended after the year 1800. The census of 1841 gives one death annually for every 44·5 persons.' According to the Registrar-General's reports, the average mortality in England and Wales for the six years ending 1844 was 1 in 46—showing again a slight improvement. The extremes vary from 1 in 37 in Lancashire, to 1 in 55 in Surrey, Sussex, and North Wales.

In general terms, it may be remarked that the commencement of the diminished ratio of mortality is nearly contemporaneous with those inventions which contributed to give such an increased power to the productive industry of the nation. The Duke of Bridgewater and Brindley constructed the Worsley and Manchester Canal between 1758–60, and the Liverpool and Manchester Canal between 1762–67. In 1769, the connection between Boulton and Watt for bringing into play the patent obtained by the latter for improvements in the steam-engine was formed. In 1775, the partners obtained from parliament a further extension of the patent, which shows that they were then only beginning to reap the advantage of the improvements. Arkwright obtained the first patent for his spinning machinery in 1769, and his second patent in 1775. His first water-mill was erected in 1771; but five years elapsed before he began to derive any profit from it. The influence of these improvements was, from their commencement, of the most marked kind, and it ramified over the whole country.

By means of these inventions, conveniences and luxuries were brought within the reach of incomes which previously could not afford them; and the extraordinary cheapness and goodness of British manufactures, with such advantages, so increased the demand for them in foreign markets, that the manufacturers found the supply of labour insufficient. The national wealth was not only increased, it was diffused through all classes of society. Increased incomes, the spirit of

rivalry, prompted all classes, the labouring-class as well as others, to live more comfortably; better clothed, housed, and fed, men became liable to fewer diseases.

From the middle of the eighteenth century, a stimulus had been given to the popular intellect, and the English were becoming a reading nation. The great inventors were themselves chiefly members of the middle and humbler classes, and the earliest of the great manufacturers were so likewise. Sunday schools, book-clubs, and the diffusion of newspapers, were perhaps amongst the most serviceable means of enlightening the people of England during the reign of George III. At last came Joseph Lancaster and his cotemporaries with their cheap apparatus for the elementary education of the masses. When we find such circumstances accompanying the diminution of mortality in England, we cannot refrain from supposing them in some measure connected.

We deem it, then, tolerably clear that the great promoters of the health of individuals are—increased affluence, relieving the mind from despondency or harassing care, and furnishing the means of cherishing the body; and increased intelligence, teaching how to derive the most advantage from this affluence, and laying the foundation of habits of judicious self-control; and that the great promoter of the health of communities is the extension of these advantages to as many of the individuals or classes composing them as possible. The possession of affluence, and the intelligence requisite to acquire, retain, and use it aright, is the main distinction between what are called civilised and savage men. In the common practice of sinking the individual in the class—speaking of nations as resembling or contrasted with nations—we are apt to overlook the fact, that every civilised nation is not necessarily composed exclusively of civilised human beings. In every nation, even in our own, there are many who grow up, live, and die, unreflecting creatures of impulse, scrambling day after day to match a precarious livelihood—now gorged, more often starved—ignorant of responsibility to God or man—in short, as complete savages as are to be found among the woods of America or in the bush of New Holland. The detrimental influence of a numerous class of this kind being left in any society is not confined to itself. Its existence does not merely lower the average of virtue and comfort in a country by diminishing the ratio its sum bears to the total of the whole population; the contagion extends to the civilised or comfortable classes, who are, by proximity, brought into contact with it. From the squalid dens in which this class congregates, emanate contagious diseases that penetrate into the dwellings of the wealthy. Its numbers compose what an eminent statist has aptly called 'the dangerous classes of large cities;' the ranks of our thieves and housebreakers are perennially recruited from among them. They constitute, in times of domestic contention, the brute instruments of the wicked of the *civilised* class. They are a chronic disease in the social body; and a nation can be healthy only in proportion as they are diminished in number, or become humanised by a participation in the comforts of their more favoured brethren.

The advantages which society has derived from augmented wealth and extended education, may be distributed under three classes, according as they proceed from greater facility of procuring physical comforts, owing to their greater abundance, or from the greater power of contributing to their own enjoyment by regulating their moral conduct, which men derive from intellectual cultivation, or from the union of both these causes. We proceed to illustrate, by some brief statistical details, the mode of operation in each of these three classes:—

The advantages which the whole community derive from an increase of wealth, and its source, more efficient application of industry to the natural wealth of the country, are of two kinds—those in which all participate, even those who do not exert themselves; and those of which individuals acquire a share by their personal exertions. Of the first kind are the benefits resulting from drainage in town and country. The stimulus given by the inventions adverted to at the outset has extended to agriculture; and the efforts which have been made to render land which was not productive, or productive of little, more fertile, have indirectly contributed to promote the public health. The draining of the fen counties on the east coast of England, has banished a class of diseases which were most destructive in these districts. The fevers of Essex used to be inferior in virulence, but scarcely inferior in frequency, to those of the Pontine marshes. With the drainage of the marshes of that county these fevers have disappeared. 'The intermittents,' says Mr Rickman, 'which, heretofore, under the name of ague, infested the country very extensively (especially the fen districts), are no longer spoken of.' In the time of Richardson the novelist, as we learn from his published correspondence, the scourge visited periodically even those families which were in easy circumstances. The change for the better is of course most manifest in the positively unhealthy districts, but it is experienced in the diminution of chronic rheumatisms, wherever surface drainage and underground drainage have extended. The exertions of the more wealthy classes in large towns, to promote by sewers and other aids of public cleanliness their own health and comfort, has in like manner indirectly tended to promote the health and comfort of all classes. There are nooks and corners in London, inhabited exclusively by the poor, which are still badly enough off in this respect; but we do not, even in them, find 'the kennels running blood two days in every week,' as Dr Johnson has left on record was the case in Southwark in his day; nor do we find 'pigs bred and fed in the houses or back-sides of paved streets,' routed out in droves by the constables in the fashionable purlieus of St George's, Hanover Square, as was the case in 1761.

The advantages which each individual must acquire for himself by his own exertions are, generally speaking, superior household accommodation, clothing, and food. Previous to the impetus given to national industry in the early part of the reign of George III., the following are the rates of wages which the labouring-classes of England had it in their power to earn per week:—*Men*—In the iron works at Rotherham, 10s.; in the cutlery and plating trades at Sheffield, 13s. 6d.; in the cloth manufactures at Wakefield, 10s.; the colliers in that neighbourhood, 11s.; in the manufacture of cloth at Leeds, 8s. 3d.; at the alum works at Ayton, in Cheshire, 7s. 6d.; in the lead-mines at Fremington, in Yorkshire, 7s. 6d.; the colliers of Newcastle, 15s. 6d.; in the manufacture of cottons and checks at Carlisle, 9s.; in the manufacture of stockings, cottons, and linsey-woolseys, in the tanneries at Kendal, 9s. 5d.; in the making of pins and shoes at Warrington, 8s. 7d.; in the manufacture of fustians, checks, hats, and small-wares at Manchester, 7s. 1d.; in the potteries at Burslem, in Staffordshire, 9s. 6d.; in the manufacture of piece-goods at Witney, in Oxfordshire, 11s.; making carpets at Wilten, in Wiltshire, 11s.; pins in Gloucestershire, 11s.; says and burying-crape at Sudbury, 7s. 6d.; says and calimancoes in Suffolk, 5s. 9d.; flannels and linseys at Salisbury, 8s. *Women*—In the lace manufacture at Bedford, 4s. 6d.; in the cloth manufacture at Leeds, 3s.; in the lead-mines at Fremington, 6s.; in the Kendal manufactories, 3s. 3d.; in making pins and shoes at Warrington, 4s. 6d.; making shoes and hats at Newcastle, 4s. 6d. *Children*—In the porcelain and glove manufactures at Worcester, 2s. 6d.; of shoes and hats at Newcastle, 1s.; boys in the potteries at Rotherham, 3s.; boys and girls in the Fremington lead-mines, 3s. 3d.; children at Kendal, 2s.; children at Manchester, 3s. 5d. The medium rate of the wages of manufacturing labour was—in the east of England, 6s. 6d.; in the south, 9s. 4d.; in the west, 11s. The medium rate of agricultural wages was 8s. in the eastern counties; 6s. in the southern; and 5s. 10d. in the western districts. These rates were ascertained by Arthur Young

in his tours of 1768 and 1770. Young estimates the population of England and Wales, in 1770, at 8,500,000; of these he gives 2,800,000 as the number engaged in agriculture—the landlords, with their families and dependants, amounting to 300,000; and the number engaged in manufactures, 3,000,000. This, on a rude estimate, would give the numbers of the population dependent upon the wages of labour for subsistence, of that time, at less than 4,000,000. He estimates the non-industrious poor at 500,000.

The information given by Mr Jellinger Symons in his 'Arts and Artisans at Home and Abroad,' published in 1839, enables us to contrast with Young's statements the capability of earning possessed by the labouring-classes of England in our own day:—*Men*—In Manchester, a spinner can earn from 20s. to 25s. a week; a man in the card-room, 14s. 6d. to 17s.; a weaver by power, from 13s. to 16s.; by hand, from 7s. to 15s.; dressers earn from 28s. to 30s.; and mechanics from 24s. to 26s. The wages at Sheffield vary from 25s. to 35s., and often amount to 40s., for workmen in the skilled departments; in the iron-works of the Birmingham district, wages average from 20s. to 30s. for the common labourers; in the Leeds flax-mills, men earn from 17s. to 19s. a week; in the Gloucestershire cloth-factories, from 12s. to 14s. In other trades, the average wages per week throughout England are—iron-founders, 23s. to 30s.; machine-makers, 26s. to 30s.; sawyers, 24s. to 28s.; carpenters, 26s. to 25s.; stone-masons, 18s. to 22s.; bricklayers, 17s. to 20s.; spadesmen, 10s. to 15s.; porters, 14s. to 16s.; colliers, 3s. 6d. a day; stocking weavers in Leicester, 8s. 3d. per week. *Women* earn per week, at Manchester, as spinners, 10s. to 15s.; in the card-room, 9s. to 9s. 6d.; weavers by power, 8s. to 12s.; by hand, 6s. to 12s.; in the Leeds flax-mills, 5s. 6d. to 6s. 6d.; in the Gloucestershire cloth-factories, 4s. to 5s. Children can earn in the Manchester factories from 1s. 6d. (scavengers) to 7s. a week; in the Leeds flax-mills (when nine or ten years old), 3s. 6d. to 4s. 'Agricultural wages,' says Mr Symons, 'in England vary so little, and are so well known, that I need hardly do more than state, that in the Cotswold districts, for instance, a shepherd receives 10s. weekly; a carter, the same; day-labourers, 8s. in summer, and 6s. in winter; in addition to which, they earn 3 guineas at harvest time, which will pay their rent. Women receive 6d. a day in winter, and 8d. in summer, and 1s. in time of hay and harvest. Perhaps these are the lowest wages paid in any district in England. From 8s. 6d. to 10s. 6d. will be throughout the average wages of the great bulk of adult male agricultural labourers of England. These rates of wages are taken at a period when the remuneration of labour is retrograding in a marked manner. Even under this state of affairs, however, they show that the increase of national wealth has at least given individuals of the labouring-class the command of a greater money income.

The labourer's power of commanding the comforts of life can only be partially known from a statement of his earnings; attention must be paid to what these earnings can purchase. The principal expenditure of the labourer, as already stated, is in house-rent, clothing, and articles of domestic consumption. By the improvements of machinery, all classes are enabled to procure better clothing at a lower price than they formerly paid for an inferior article. The extent to which this change has been carried, may be inferred from one or two facts regarding our manufactures. In 1787, when the mule-jenny first came into common use in Bolton, Paisley, and Glasgow, the manufacturers paid for their fine yarn at the rate of 20 guineas per lb.; the same quality of yarn has of late been sold at from 13s. to 15s. a lb. The cotton twist, which sold in 1786 for £1, 18s. per lb., is now sold for 3s. The process of reduction in the price of manufactured goods is still going on, and in the linen as well as in the cotton trade. Canvass, No. 27, an article, the quality and dimensions of which do not vary, which sold in 1814 at 30s. a piece, had fallen in 1833 to 16s. In the woollen manufactures, a great reduction of price compared with quality has also taken place. The consequence is apparent in the style of dress adopted by the working-classes of Great Britain, so different from what prevails on the continent, and did formerly prevail here. As to houses, every person who has attained to middle age must have remarked the improvement in many districts of the accommodation for the labouring-classes in this respect; and yet the money rental seems to have remained nearly stationary. Young states the house-rent of the working man to have been in his time—at Leeds, £2; Wakefield, £2, 5s.; Newcastle, £2, 12s. 6d.; Hatfield, £2, 15s.; North Mimms in Middlesex, £3, 10s.; Kensington as high as £5. In 1839, the average rental of a labourer's cottage in the country near Penzance was about £3; in the town, £5; in the county of Rutland, £1, £1, 10s., and £2. In Suffolk, in 1838, the house-rent of 539 labourers' families averaged £3, 11s. per family; in Northumberland, the average rent of a labourer's cottage was estimated at £2, 10s. Even the price of provisions, which is generally supposed to have been so much lower in former times, has not increased, if it has increased, so much as is supposed. The average prices of butcher meat, beer, cheese, milk, and butter, throughout the kingdom, do not materially differ now from what they were in 1760; bread is somewhat dearer, but improved in quality, and potatoes in ordinary years are much cheaper. Tea, coffee, sugar, and pepper, have been greatly reduced in price; and now, instead of scarcely ever appearing in the weekly bills of the labourer, are standing articles of his expenditure.'

This improvement in the quality of the accommodations procurable by a moderate income must always be kept in view, when comparing what a man can earn now with what he could earn formerly.

It would, however, convey a false impression of the amount of social advantage at any time derived in Great Britain from the great increase in the productive powers of industry, were we to leave unnoticed the large and increasing class which has never yet been reached by these benefits. Even in the most busy marts of industry, numbers are to be found, and these not always entirely unable or unwilling to work, who are in a state bordering upon destitution. We have a remarkable example of this class in the city of Limerick, where a large district is in a manner given up to them. In England, it is to be observed, the mean value of life among the more comfortable portion of the working-classes is now as high as that of the middle classes in last century: this appears from comparing the experience of the Amicable Insurance Office, established in 1706 for the benefit of the middle classes, with the table of mortality collected by the Society for the Diffusion of Useful Knowledge, which embraces the history, as to mortality, of 24,323 years of life among the labouring-classes from all parts of England, from 1823 to 1828. In Limerick, on the contrary, while the deaths in the three tontine societies there founded in 1807, 1811, and 1814, and with lives injudiciously selected, show respectively one death annually in 108, 81, and 182 persons, the annual mortality among the poor is 1 in 19. This is not all. 'The frightful excess of epidemic and endemic diseases among the poor of Limerick may be gathered from the following fact, that while the per-centage proportion of this class to the whole number of deaths in England and Wales in 1838 was under 20 (19·8); in the metropolis and Leeds, 26·1 and 26 respectively; in Manchester, 23·2; in Birmingham, 20; and in Liverpool, 19·8; it is in Limerick not less than 40, or nearly five times as great as the proportion of deaths from diseases of the respiratory system, to which, among a healthy population, it ought to be nearly equal.'* Among the families of

* 'Wherever the absolute mortality is low, the number of deaths in the epidemic class is less than the number in the pulmonary class; and on the contrary, wherever the deaths in the first class exceed or equal those, it may be affirmed that the absolute mortality is high.'—*First Report of Registrar-General.*

this class who come under the notice of Dr Griffin—'Out of 66 who had more than 10 children born alive, 13, or one-fifth, had lost 11 or more of those children; and the aggregate mortality of those families was 159, or 12 each, which, if distributed among the same number of families who had the greatest number of children born alive, amounts to 79 per cent., and was probably higher.' He adds—'It has been remarked that production is often most rapid among a population in extreme wretchedness; and I strongly suspect that this is a consequence of the high mortality which occurs in such circumstances. It is the character of any influence which tends greatly to depress the powers of life, that it always bears heaviest on the tenderness of infancy and the feebleness of age. Now, as I find that the poor nurse their own children, there is generally an interval of about two years between the birth of one child and that of the next; but if a child dies early on the breast, this interval will be much shorter; and if this occurs often, there will be a certain number born, as it were, *for the purpose of dying*.'

Effects of Increased Wealth and Know[illegible] Combination.

Some results from the com[illegible]ce of increased wealth and knowled[illegible]ted to. It is to be observed that the [illegible] times command many comforts favour[illegible] it it is only when knowledge suggests a [illegible]ment of the means afforded by opulence, and opulence on the other hand exists to avail itself of the aid of knowledge, that the full benefit of the conditions we have been reviewing can be said to be realised. The following illustration may make our meaning more clear:—

It is commonly believed that there is more danger to life from lithotomy than from amputation; but statistical inquiry shows that death more frequently follows the latter than the former operation. The results of 640 cases of amputation of legs and arms, in hospitals and private practice, in France, Germany, United States, and Great Britain, were in 150 cases fatal—a ratio of 23½ per cent.* It is to be kept in view, however, that the mortality in cases of amputation very frequently arises from the injury or disease on account of which the operation is resorted to; whereas the mortality from lithotomy is almost invariably the direct defect of the operation alone—the surgeon having it in his power, in the latter case, to choose a time when the patient is in the best condition to endure the suffering, which he can rarely do in cases of amputation. When we reflect upon the intimate acquaintance with the human frame, and the confidence in his own skill, which the surgeon can only acquire by dexterity, the result of much practice and the traditional experiments of his predecessors, we are able to form some idea of the importance of knowledge in alleviating the miseries of humanity. And when we add the consideration of the cost of instruments, medicines, and the time and trouble requisite to constitute a good surgeon, we are able to form some idea of the extent to which stored-up capital is necessary to men having been able (in the first instances at least) to give and receive this alleviation.

Another example of the benefit of the co-operation of increased national wealth with increased knowledge, is the diminished risk of life in cases of child-birth. It may appear that we are wandering from the consideration of wealth, seeing that the examples we are about to subjoin are selected from the returns of lying-in hospitals—the only trustworthy statistics on this point. But it must be kept in mind, that a nation must be wealthy before it can support such institutions; that the improvement so marked in the case of the poor, must be *a fortiori* greater in those who can afford continued watching and the best assistance; and that the affluent classes must have enjoyed the benefit before it could be extended to the poor. The process by which a share in this and other privileges of the rich has been extended to the poor, is a question for after investigation. With this explanation, we submit the following quotation from M. Quetelet's 'Treatise on Man,' to show the mortality of women in child-birth, and their children:—

'According to Willan, the mortality in the great lying-in hospital in London, into which about 5000 women were annually admitted, was—

	Of mothers.	Of children.
From 1749 to 1758,	1 in 42	1 in 18
... 1759 ... 1768,	1 ... 50	1 ... 20
... 1769 ... 1778,	1 ... 55	1 ... 42
... 1779 ... 1788,	1 ... 60	1 ... 44
... 1789 ... 1798,	1 ... [illegible]	1 ... 77

According to Casper, the mortality of confined women at Berlin has been—from 1758 to 1763, 1 in 95; from 1764 to 1774, 1 in 82; from 1785 to 1794, 1 in 141; and from 1819 to 1822, 1 in 152.'

The same author supplies us with an estimate of the sanatory influence of vaccination:—In most civilized countries there are enactments on vaccination [illegible] or less severely, which are enforced with [illegible] rigour. According to Casper and several other [illegible] who have written on the ravages caused by the small-pox, it would appear that formerly generations were decimated by this scourge—that is to say, one-tenth of the human race died from it. Duvillard has found—1*st*, That in the natural state, of 100 individuals of 30 years of age, scarcely four individuals have escaped an attack of small-pox; 2*d*, That two-thirds of all infants are attacked by it sooner or later; 3*d*, That small-pox, in the early years after birth, destroys, on an average, one out of every three who are affected with it; 4*th*, And one dies out of every seven or eight affected, at whatever age it may be. Such was the state of things before the discovery of vaccination; it has since been much ameliorated. However, in 1817, 745 persons died in Paris of small-pox; in 1818, 993; and in 1822, the number was as many as 1084. Also, at St Petersburg, in 1821, 408 deaths took place from it; and at Vienna, 238 in 1822; whilst in London, in that year, there were 712. Prussia has been much better dealt with than other countries: during the two years 1820 and 1821, taken together, only 1 in 7204 persons died; whilst France lost 1 in 4218 the last two years. The following are the data of Berlin for almost half a century:—From 1762 to 1791 inclusive, 4455 deaths; from 1792 to 1801, 4999 deaths; from 1802 to 1811, 2955; from 1812 to 1822, 555. The number of deaths for the last period, which is extremely small in comparison with the preceding years, would be still less if the deaths for 1814 and 1815 were subtracted, during which time vaccination was neglected. Indeed these two years had 411 deaths from it; so that during the others there were only 114. But we should fall into a serious error, as M. Villermé has said, if we counted as gain to the population all those individuals who had been vaccinated, and not carried off by the small-pox. "An epidemic, or any other malady against which we endeavour to secure ourselves," says M. Villermé, "indeed suppresses one cause of death; but from that circumstance the probability of dying from some other disease becomes greater. In other words, by closing one of the gates of death, we open the others wider, so that more persons pass through these latter; which is not saying that mortality should be equally rapid. Consequently, vaccination, and every preservative against epidemic disease, or any disease whatever, does not increase the population of old Europe *directly*, but, what is still better, it alleviates the lot of those whom it snatches from the chance of the small-pox, it diminishes the number of the blind, it preserves the native beauty of the person, and increases the average duration of life."'

This will scarcely be called an exaggerated estimate of the advantages resulting from the discovery of vaccination. In the three examples which have been adduced, the reader may see how far knowledge and afflu-

* The recent application of anæsthetic agents in surgical operations is expected to diminish in a notable proportion the ratio of fatal to successful cases.

IMAGE EVALUATION
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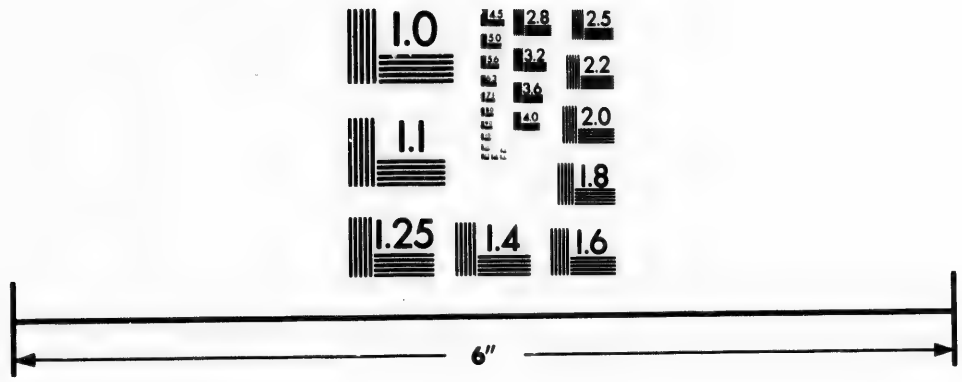

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ence combined have served as preservatives against tangible dangers. But in so far as the affluent classes are concerned, this is but a small portion of the benefits they have conferred. The habits generated in these classes by the advancement of knowledge, as a time of increased diffusion of knowledge, have been favourable to a general healthy condition of the individual system, alike calculated to ward off the attacks of disease and to baffle them when they are incurred. Any person whose memory can carry him back for forty years, and who has had opportunities of observing, may remember the deficient ventilation, the small rooms, and the number of inmates in each room, which characterised even the houses of the landed gentry. In towns the evil was still greater. But it would require to carry the retrospect still farther back—to the time when Rousseau in France, and Davy and Edgeworth in England, commenced their crusades against unhealthy absurdities in the dress and manner of living of the wealthier classes—to imagine the whole amount of the improvement which has been effected in this respect. The improved taste of the wealthier classes has contributed to improve their morals; and, in return, the better regulation of their conduct has tended to improve their general health. The practice of deep drinking, which universally prevailed, has almost ceased to exist among the affluent classes. Literary and scientific pursuits, if they do not always guard against low debauchery, save many from it, and enable still more to recover, after yielding for a time to temptation.

An interesting paper, published by M. Benoiston de Chateauneuf, entitled 'On the Duration of Life in the Rich and in the Poor,' corroborates these views. The author has made, on the one hand, an abstract of the deaths of 1600 persons of the highest rank, among whom are 157 sovereigns and princes; on the other hand, he has taken from the civil registers of Paris, the deaths of 2000 persons in the 12th arrondissement, which contains a population of workmen of all kinds—ragmen, sweepers, delvers, day-labourers, &c.—a class subjected to pain, anxiety, and hard labour, who live in want, and die in hospitals. Out of these materials he has constructed a table showing the per-centage of mortality among the two classes at different ages, and has added a column indicating the per-centage among the middle or easy classes. He found that, between 25 and 50, the deaths per cent. were—among the rich, 0; among the common class, 1·41; among the poor, 2·22: from 50 to 55—among the rich, 1·81; among the common class, 2·68; among the poor, 2·58: from 75 to 80—among the rich, 8·09; among the common class, 10·32; among the poor, 14·59. At this last age the column showing the deaths among the poor stops for want of materials—they had all died off; the column showing the deaths of the common class extends to the age of 90; that of the rich to 95. The same conclusion is indicated by contrasting the annual mortality shown by the annual average of deaths among the English middle classes who have insured their lives with the Equitable Society, and the annual average among the negro slaves. Among the former, it was only 1 in 81·5 from 1800 to 1820; whereas it has been calculated that one negro slave dies annually out of 5 or 6.

Some facts would almost seem to show, that the education enjoyed by the more affluent classes—the cultivation their minds received, partly from direct tuition, partly from their social circumstances—gave the mind an increased power of vitality. An officer of high rank in the service of a German state made this remark to the writer, when speaking of the disastrous retreat from Moscow, in which he had taken a part. The officers, he said, uniformly stood out longer than the privates, although the previous habits of both parties had led him to expect the reverse. Literary men, and artists who have attained to anything like a competence, are also a long-lived generation. The remark has been often made, of the greater facility with which young men, belonging to the class vaguely called 'gentlemen,' generally attain to superior adroitness in athletic exercises. Whenever a party of Etonians are pitted at cricket or running against a party of lads of a lower class, the difference is at once perceptible. Again, the facility with which the young men educated at Oxford and Cambridge—unapt though the system of education pursued in these two great seminaries be to prepare them for the real business of life—work their way into the routine of legal or diplomatic business, is well known. There is something in the strengthening influence of good and delicate feeding, clothing, and lodging, combined with exercise of the physical and mental faculties, sufficient to strengthen, not to exhaust, persevered in for generations, that ennobles the race of the human animal, just as careful grooming and crossing the breed judiciously, ennobles the horse. What is here spoken of, is not the power of such a process to confer genius, or true nobility of disposition; but to bring out in perfection all the average commonplace qualities of the human being. In any country, a superiority of this kind is discernible in the dominant *caste;* and as mere human animals, there is no country in the world that can produce a race equal to the young gentry of England.

Limits to the Effects of Wealth.

The limits to this favourable condition of the affluent classes in England, are to be sought partly in deficient knowledge and deficient habits of self-control; partly in a redundancy of numbers compared with property, which affects them in common with all other classes, though not exactly to the same extent. The deficiency of knowledge may be detected in several noxious practices still persevered in, such as tight-lacing on the part of the fair sex. The want of proper habits of self-control is a more deeply-rooted evil, inasmuch as it has its root in a physical fact too much overlooked by reasoners upon morals. When named, it will be found to be a very commonplace fact: it is, that every successive generation begins the world with as little experience as that which preceded it. Every one of us starts from as mere a state of ignorant barbarism as the child of the savage. We are forewarned of much by the instruction of those who have been taught by their own experience, or the experience of those who went before them; but there is much of which it seems impossible to forewarn us. The passions are fully developed before the reflecting powers; and every individual seems destined to experience a period of his existence in which imagination and passion are strongly and thrillingly awakened, while the guiding power of reason is yet dormant. This is the most dangerous, as it is perhaps the most pleasant, period of life; and it is one which is most dangerous with regard to that very class which is so highly favoured in other respects. Penury, or the necessity of daily labour, may restrain the less affluent classes at this period of life; but the younger branches of the affluent class have no such substitute for the control of reason; and in proportion as their general healthiness is higher, so their passions are developed, it may be, with greater intensity. It is at this period that many of the more favoured class make shipwreck of their health, incurring diseases which cling to them through life, if they do not bring it to a premature close.

The influence of economical circumstances upon the affluent classes, in regard to their moral and physical welfare, is quite as striking as their influence on the less fortunate classes, though somewhat different in kind. The anxiety occasioned to the upper classes by the prospect or actual pressure of pecuniary embarrassment, is of a much more harassing and exhausting kind than what is suffered by the poor. Pride, and all the other secondary feelings, with ranging imagination, add to their torments; and their occupations generally demanding a steady exercise of the faculties of combination and investigation, and keeping their minds continually on the stretch even in the time of prosperity—this addition renders their burthen more than they can bear, and the whole man breaks down

beneath the weight. Excessive mental exertion, even under the most favourable circumstances, is known to be productive of fatal effects. Even children of affluent and fortunate parents have been sacrificed to the vanity which was gratified by their displays of precocious talent. The cupidity which grows upon men struggling to maintain their place in society, increases this evil by forcing on the acquirements of children, in the hope of seeing them able, at a comparatively early age, to provide for themselves. Casper of Berlin published in 1834 a tabular statement of his observations on the sanitary tendency of various occupations, which serves to throw some light on this intricate question:—

Of 100 Theologians, there have attained the age of 70 and upwards,	42
Agriculturists and Foresters,	40
Superintendents,	38
Commercial and Industrious Men,	35
Military Men,	33
Subalterns,	33
Advocates,	29
Artists,	28
Teachers, Professors,	27
Physicians,	24

That physicians should stand lowest in this scale of vitality, is not, considering their exposure to contagion, to be wondered at; and the high grade of theologians is equally intelligible, from their certain though moderate income, and the equanimity favoured by their pursuits. It is, however, startling at first view to find the average duration of life among commercial men so little elevated above that of military men, in a table constructed in a country where war had raged at no remote period. The last fact seems to establish that the agitation of mind produced by mercantile uncertainties and difficulties is scarcely a less destructive agent than the sword.

There is perhaps a point in the development of national wealth and civilisation at which mortality shows a tendency to increase. Such an idea is naturally awakened when we learn that the mortality of England is now slightly greater than it was some years ago. The proportion of deaths to persons in the decade 1821-31, was 1 to 49; that of the decade 1831-41, according to the population returns, 1 to 44·5; and that of the six years ending 1844, 1 to 46.

EDUCATION.

The statistics of education have an obvious value in their connection with many questions regarding the civilisation of countries.

It is clear, however, that the state and amount of education in a country is a highly complex question; for, first, there may be much education of a poor and inadequate kind; and second, there may be conditions favourable to education in some countries, and not in others—as, for instance, the natural character of the people, the tendency of the political and social institutions, and the direction which the energy of the people chiefly takes, as towards war, commerce, or art. The numbers at school are also liable to be affected by the ratio of the increase of population; for where there is a rapid increase of people, there is always a greater than usual proportion of the young.

Prussia, where the most perfect of all national systems of education exists, as far as organisation is concerned, contained, according to a census taken some years ago, 12,726,828 inhabitants, of whom 4,767,072 were under fifteen years of age. It is reckoned that, out of 100 children from one day to fourteen years of age complete, there are 43 of full seven and upwards—a legal age for attendance at school in Prussia. This would give 2,048,030 children in Prussia liable by law to attend school. It was found, in point of fact, that 2,021,421 did attend, being only a shortcoming of 21,609, a small enough allowance for contingencies. Thus if we were to take Prussia as a criterion for old states, where the population does not advance rapidly, and consider the years between 7 and 15 as those proper for school attendance, we should conclude that about *one-sixth* of the whole population of such a country should be at school.

Most of the German states make an approach to the organisation of the Prussian system; and we find that in Austria there was, a few years ago, one school for every 275 families. But the object of the governments in supporting education in Prussia and Germany generally, is said to be of a narrow kind—a species of drill, for the purpose of conferring the accomplishments of reading, writing, and arithmetic, and to train the young to a subserviency to the government itself.

Education was in a low state in France till the general peace of 1815, since which time it has become a government object, and made a rapid advance. The elementary schools instructed 737,369 pupils in 1815; in 1828, this number was raised to 1,500,000; being *one-twentieth* of the population. It is calculated, however, that more than one-fourth of the people of France are still unable to read or write.

In England and Wales, in 1818, there were 4167 endowed schools, 14,282 unendowed schools, and 5162 Sunday schools, educating in all 644,000 children, or *one-sixteenth* of the population. Of 11,000 parishes, 3500, or nearly a third, had no school whatever. Since then the number of both schools and scholars has been greatly increased. In 1838 the following returns were made to parliament:—

Attending Infant Schools,	89,005
... Daily Schools,	1,276,947
Total,	1,365,952
Attending Sunday Schools (supposed to be an exaggerated statement),	1,548,896

Under the annually increasing grants for educational purposes, probably from a tenth to an eighth of the people of England and Wales are now receiving school instruction. Nevertheless there are still from 800,000 to 1,000,000 of young persons unprovided with the means of elementary tuition.

The registration of marriages, by which the parties are required to sign their names on being united, has supplied within the last few years a means of testing the proportion of those ignorant of writing throughout England and Wales. Of the 121,083 couples married during the year ending June 30, 1839, there were 40,587 men, and 58,959 women, who, being unable to write their names, were obliged to sign by marks. The proportion of men unable to write was thus 33, of women 49 per cent.; medium, 41. The number unable to write was least in the metropolis, and next to it in the northern counties; and greatest in Lancashire, Bedfordshire, Monmouthshire, and Wales. The trustworthiness of this test was confirmed by the registration of the ensuing year, when amongst the 124,339 married couples, 41,812 men, and 62,523 women, were found to sign with marks; and the proportion in the various districts was also nearly the same. It is to be remarked, that a large portion of the married couples recorded in these years must have consisted of persons who passed their educational years in times when the means of instruction were much less extended than they now are. A few years hence, the proportion of both men and women attesting the marriage-register with 'marks' will probably be much diminished.

Scotland, unlike England, possesses a national system of education, there being a legally-endowed school in every parish, under the care of the clergy. Returns to parliament in 1834 gave the following view of education in Scotland:—

	Schools.	Pupils.
Parochial,	1047	68,293
Private,	3995	164,160
Total,	5042	232,453

The whole emoluments of the teachers of the parochial schools was £55,339, being at an average an income of

£45, 11s. 9½d. to each. The aggregate sum was composed of—endowments, £29,642; fees, £20,717; other emoluments, £4979. Taking 68,293 as the number of pupils in the parochial schools (it was, however, the *greatest* attendance), each costs the public 15s. 7¼d. per annum. In the same year, the Sabbath School Union for Scotland taught 65,326 children.

The proportion of children taught *out of* the parochial system was unexpectedly great. It was greatest in certain counties, as follows:—

	Parochial Schools.	Private Schools.
Edinburghshire,	38	460
Aberdeenshire,	98	347
Lanarkshire,	73	322

—and there was no county, except Peebles, where the parochial schools were the most numerous. Only one-fifth of the teachers and one-fourth of the scholars were under the parochial system. It is also to be remarked, that some of the schools returned as parochial were merely under the care and patronage of parochial clergymen, by whom they had been established. The returns were considered as not quite complete, and the number attending school in 1834 was *computed* as being more probably 523,154, the proportions in the two different classes of schools being nearly the same.

Notwithstanding the political agitations and poverty which have long depressed Ireland in many respects below the level of the sister kingdoms, it has certainly for many years been above at least England with respect to the elementary instruction of its people. The ability to read and write is observably much more diffused in Ireland than in England; and it is often remarked with surprise, of Irish peasants of the humblest appearance, that they possess an acquaintance with the classics and the elements of geometry.* Till 1831, education in Ireland was chiefly left to private enterprise and the efforts of a few religious societies: the government in that year established a Board for National Education, which has since been a channel for the application of a considerable amount of public money to this purpose. In 1835, a return to the Commissioners of the Education Board gave a computed total of children attending school in Ireland at 635,946, the population being at the same time computed at 7,954,100; so that the proportion under school instruction appeared to be about 1 for every 12·5 inhabitants. Since then, the national system has made great advances. The following synopsis, drawn up from the reports of the Commissioners, shows the progress down to December 31, 1848:—

Reports of the Commissioners of Education.	Number of Schools in actual operation.	Number of Children on the Roll.
1834, . .	789	107,042
1836, . .	1181	153,707
1838, . .	1384	169,548
1840, . .	1978	222,260
1847, . .	3825	402,622
1848, .	4109	507,469

The average number of pupils in each school is 125, and it is hoped that this will increase as the prosperity of the country revives. The number of applications for grants to new schools in 1848 was 636, of which 402 were granted and 234 rejected. The total amount of salaries paid to teachers for the year 1848 was £57,018, being an increase of expenditure, as compared with the year 1847, of £6621. The appointment of paid monitors has been found a very successful experiment, and the number has accordingly been increased, the salaries varying from £4 to £7 a year. The Irish national system at first met with great opposition, in consequence of religious party-spirit; but this obstacle, we are happy to observe, is gradually giving way.

Education is actively conducted in America, and it is calculated that about a seventh of the population are at school. In most of the states, schools are supported by a tax on property, and the superintendence is intrusted to committees of the rate-payers. In those of New England, the schools are as one to every two hundred of the inhabitants—a proportion, perhaps, exceeded in no part of the world. The education imparted is under a general, not party or sectarian management; and every attempt made by religious denominations to acquire a special control over the public schools has been promptly checked. The affected belief that this unsectarian education would lead to irreligion and discontent has been completely falsified. 'It is acknowledged by the rich,' says Sir Charles Lyell in his recent 'Visit to the United States,' 'that when the free schools have been most improved, the people are least addicted to intemperance, are more provident, have more respect for property and the laws, are more conservative, and less led away by Socialist or other revolutionary doctrines. So far from indolence being the characteristic of the labouring-classes, where they are best informed, the New Englanders are rather too much given to overwork both body and brain. They make better pioneers when roughing it in a log-house in the backwoods, than the uneducated Highlander or Irishman, and the factory girls of Lowell, who publish their "Offering" containing their own original poems and essays, work twelve hours a day, and have not yet petitioned for a ten-hour bill.'

In surveying the statistics of education, we must keep in mind a few considerations by which the character and effects of education are liable to be much affected. Education is not certain to produce *good* effects, but only those which its directors contemplate and seek to bring about. It is a means of conferring certain accomplishments upon the mind, and modifying it to certain ends, inclinations, and habits of thinking and feeling. Its efficacy, even where well directed, is liable to be greatly modified by the character of the people amongst whom it is operating: for instance, a European people of good stock, and amongst whom all refining social agencies have long been at work, will show better results with a certain apparatus of school instruction, than a people newly emerged from barbarism. Above all, our expectations of moral results must be governed by the degree in which the moral department of education is attended to. Intellectual education gives only a [illegible] and information; it requires a training of the moral being, of the heart as well as head, to produce good conduct.

It has been seen that Prussia stands at the head of all the countries adverted to, with respect to the proportion of the population attending school. It is excelled in this respect by the United States of America, where, it is computed, there is a school for every 200 souls. England and Scotland have probably a ninth of their inhabitants at school—a considerably smaller proportion. But reckonings of schools and scholars are only a means of ascertaining a portion of educational influences. It cannot be doubted that, besides all the benefits, such as they are, of school learning, the youth of this country enjoy an immense advantage in the influence which the free institutions, the humanity, and the tone of mind resulting from an old-established civilisation, must exercise upon them. In a national system of education, the central government should possess but a slight, if any influence, and the business of both arranging and supporting should be left as much as possible in the hands of the people themselves. We beg to submit the following general views on this subject:—Anything done by government, as the organ of society, to promote universal education, must be based upon the actual state of educational efforts in the country. The people must everywhere be encouraged, invited, stimulated, to take a portion of the task of edu-

* Of an edition of Euclid published by the editors of the present work, by far the largest proportion of copies is sold in Ireland. Mr Bichens, in a report on the Poor-Laws, asks, 'Where in England could the ordnance surveyors find persons amongst the *lowest class* to calculate the sides and areas of their triangles, at a halfpenny a triangle, as they do in Ireland, and plenty of them?'

cation into their own hands. With communities, as with individuals, education cannot be a one-sided matter, in which the instructor arouses the pupil; there must be exertion on the part of the latter also. The mistake of some governments, especially the Prussian, has been to hold the people as entirely passive: they have *drilled* rather than *educated*. Almost everything that has been hitherto done in Great Britain to promote education has been the result of private enterprise: even the majority of endowed schools are the fruits of private enthusiasm in the cause of education. A paper by Mr Long, in the second volume of the 'Journal of the Central Society of Education,' estimates the annual income of endowments in England, for purposes of education, at £1,500,000; and shows the want of a proper power, invested in some individual or body, for the purpose of assisting, directing, and correcting all who are intrusted with the management of such charity property. Educational amateurs may be deficient in skill, but funds left to support schools require some one to administer them, and to adapt the mode of dispensing them to the perpetually altering circumstances of society. A table of the Mechanics' Institutions and other popular associations in England for promoting and diffusing science and literature, has been published in the 'Statistical Journal.' It is defective, but it shows approximatively what has been done by private effort for the higher education of the people. The total number of societies is stated to be 112; of 91 of these the annual income has been ascertained, and it amounts to £36,793, 14s. This is a slender provision for the intellectual wants of the adults of England, and what is more, its influence is limited in a great measure to those who, strictly speaking, do not belong to the working-classes. In the Glasgow Mechanics' Institution, a majority of the attendants on the lectures are shopmen, individuals employed in warehouses, and even some students—the middle-classes. Of the operatives who attend, the *mechanics* form a considerable proportion. The Mechanics' Institution of Liverpool, one of the most flourishing institutions of the empire, is, both in its elementary schools and its lectures for adults, frequented and supported almost, if not quite, exclusively by the middle-classes.

The facts mentioned seem to justify these conclusions:—That national education requires the operation of government only as public trustee, and of the people themselves, trying to procure the kind of education their wants prompt them to seek; that the duty of government is to insist that education shall be universal, and to provide such superintendence and means of general control as are necessary for enforcing this precept; that the duty of the people, in their respective districts, is to carry into effect the general directions of government. The business of government is to see that the necessary funds are provided, the necessary establishments for training teachers and pupils kept up, and the attendance of children enforced. The business of the people is to appoint teachers, and to take precautions for their discharging their duties conscientiously. The details of tuition are best left to the teachers, care being taken that they are previously educated for their profession. Success in teaching depends, in a great measure, upon the enthusiasm and ability of the teacher; and the most successful method is that which is best adapted to the peculiar character of the teacher. Some teach more efficiently by one method, others by another. The public judge most correctly of a teacher's ability by looking at results—at the kind of scholars he turns out. Some such organisation of the whole country for educational purposes, as is indicated in these general terms, would, by giving a controlling power to government, insure equal diffusion of education; by leaving to the people the appointment of teachers, and by leaving, to a certain extent, to individuals the choice of what should be taught, would keep alive the interest which men take in their own handiwork; and by leaving the methods to the choice of well-trained teachers, would give scope for progressive improvements being effected in the art of education by those who were practically acquainted with it. The importance of leaving a certain latitude of choice to individuals (parents, or the more advanced young men or women), is apparent from the experience of the Glasgow Mechanics' Institution. The most uniformly successful classes have been those of mechanics (or natural philosophy) and chemistry; and a large proportion of the operatives who attended them have been engineers, and others engaged in processes which are best conducted by those who understand something of their principles. Human beings are most easily seduced to undergo the toil of learning (for though to pick up fragments of information be agreeable, to devote the continuous attention necessary to understand a subject thoroughly is at first a task) by the conviction that what they are learning can be turned to profitable account. Having learned one subject thoroughly, they acquire a liking for the effort, and are more easily induced to extend their researches. It is sound philosophy not to attempt too much at first. Get every one to learn something that may benefit him in his occupations; none, who have learned this thoroughly, be it what it may, will stop there.

CRIME.

Crime is the result of various causes—as, *first*, the natural or original disposition of the culprit; *second*, the moral atmosphere in which he has lived; and *third*, the temptations placed before him. Generally, all of these causes are more or less concerned in crime, so that it becomes a very complex question. When we apply statistics to the investigation of crime, we are met by the further difficulty, that only a certain portion of the whole of the offences committed are known to us, and that the proportion known must vary in different countries according to the efficiency of the legal apparatus applied to the detection of crime. Statistics has, nevertheless, afforded some curious and valuable knowledge on this subject.

The number of persons annually committed or bailed to take their trial in England and Wales, has for a number of years past been rather on the increase; but chiefly, it is believed, in consequence of the increased efficiency of the laws. For the five years before 1839, it was 22,174 on an average; in 1840, it was 27,187. The last sum was an increase of 45 per cent. on the number for 1830, which was 18,657. In 1842 the number was 31,309; in 1843, 29,591; in 1844, 26,542; in 1845, 24,303; in 1846, 25,107; and in 1847, 28,833. It is important to observe, that these are not summaries of the whole offences of their respective years. There is, besides, a larger number of offences, which are tried summarily before magistrates. For example, in 1837, in addition to 17,096 persons convicted upon regular trial, there were 59,374 summary convictions.

By far the greater proportion of English crimes are against property. Taking the average of the five years before 1839 (22,174), it appears that 84·5 per cent. were thefts and frauds, the small proportion of 7 per cent. of these being accompanied by violence. Of offences against property and person, in which malice was involved, as murder, maiming, arson, and injuries to cattle, there were about 6 per cent. A class called sexual offences gave 2, and offences against the State, in which was included coining, 6¾ per cent.

The counties in which committals are year after year fewest are those of Wales, the four northern ones, Cornwall, and Derby; those in which they are most numerous are Middlesex, Essex, and Warwick.

There are some crimes which women are not, from various causes, liable to commit; but the gentler does not appear to be the honester sex; for the proportion of female to male committals for theft without violence, is as 84 to 73 per cent., a difference of one-sixth against females.

In the inquiries which have been made with regard to the age of offenders, wonderfully uniform results have been found, as will appear from the following table, giving the centesimal proportion at each period of life:—

	1856.	1857.	1858.	Greatest Difference.
Under 12 years,	1·64	1·38	1·38	0·22
From 12 to 16,	9·71	9·72	9·92	0·21
... 17 ... 21,	29·65	29·23	29·13	0·50
... 22 ... 30,	31·42	31·74	31·24	0·50
... 31 ... 40,	14·42	14·26	14·75	0·32
... 41 ... 50,	6·76	6·42	7·02	0·27
... 51 ... 60,	3·23	3·24	3·60	0·33
Above 60,	1·40	1·25	1·28	0·15
Not ascertained,	2·06	1·79	1·76	0·30
Total,	100·0	100·0	100·0	

The large proportion at the periods of adolescence and youth must be considered as strictly owing to a greater tendency to crime; for the proportions of human beings at those ages to the whole population are different, the persons from 16 to 20 being as 10 per cent., and those from 20 to 30 as 15 per cent., of the entire nation. It is calculated that amongst the persons living in England and Wales, from 17 to 21 years of age, there is one committal for 232; while from 41 to 50 there is one for 941; and above 60 one for 3391 individuals. We thus see how great an influence the strong and unregulated feelings of youth exercise in inducing criminality.

The connection of education or non-education, and of poverty, with crime, has excited much attention during the last few years. It is abundantly clear that some school-learning may exist where the moral department of education has been neglected, or where the temptations to error may be very great. The education of mere reading and writing may only supply the means of committing a crime—as forgery—instead of tending to restrain from it. Yet it certainly does appear that criminals are generally uneducated in all ordinary respects. Mr Rawson, secretary of the Statistical Society of London, has found that, of every 100 offenders in England and Wales, 35·4 per cent. could neither read nor write; 54·2 per cent. could read and write imperfectly; 10 could read and write well; and only ·4, or less than a half per cent. had received a good education. In Scotland, a late return showed that out of 8907 offenders, 20·2 per cent. could neither read nor write; 59·2 per cent. could read and write imperfectly; 18·2 per cent. could read and write well; and 2·4 per cent. had received a superior education.

Mr Bentley, author of a History and Directory for Worcestershire, has shown the relation of non-education to crime in a different way. It appears from his tables, that the six English counties having the greatest proportion of schools are Cumberland, Durham, Middlesex, Northumberland, Rutland, and Westmoreland, in which the schools are one for every 727 inhabitants, and the criminal offenders one for every 1156 inhabitants. The six counties that have the smallest proportion of schools are Chester, Dorset, Hereford, Lancaster, Northampton, and Somerset, in which the schools are one for every 1540 inhabitants, and the criminal offenders one for every 528; that is, out of a people having twice the number of schools, there is not in proportion half so many criminals as where the schools are deficient. A comparison of the number of schools in the six most criminal, and the six least criminal, of the English counties, leads to the same conclusion. In Essex, Gloucester, Hertford, Chester, Somerset, and Warwick, we find one criminal offender in the lists of government for every 499 inhabitants, and only one school for every 1069 inhabitants; on the other hand, in Cornwall, Cumberland, Derby, Durham, Northumberland, and Westmoreland, we have only one criminal to every 1309 inhabitants, while we have one school for every 889 inhabitants. In other words, there are six counties in England which have nearly three times the amount of crime found in six other counties; and the counties in which the least crime is found have one-fourth more schools than the counties in which crime abounds.

The different distribution of educational acquirements among the convicts of England and Scotland is striking, and requires for elucidation some inquiry into the proportional diffusion of knowledge among the whole community in each country. Among the affluent classes, it is much the same, but among the working-classes it is materially different. According to the factory returns, there exists a more widely-diffused instruction in Scotland than in England: in the former country, out of 29,486 operatives, 95·8 per cent. could read, and 53 per cent. could write; while in the latter, out of 50,497 operatives, only 86 per cent. could read, and 43 per cent. could write. We have seen above that, in proportion as education was diffused through the whole community, the proportion of criminals to the total of the population was diminished; and this holds good in Scotland. But the mere extension of intellectual education to individuals of a class in which improved economical circumstances and self-education in moral respects has not induced that moral sense shown to be elicited in civilised communities, does not raise these individuals to the same elevation in the moral scale that the same education would do under more favourable circumstances. To produce the full benefit of education, it is *the class*, not merely the *individual*, that must be educated. An educated individual, belonging to an uneducated class, either continues to associate contentedly with his original companions, and retains their comparatively low standard of morality, combined with the increased power lent him by education—he has as feeble a restraint upon his conduct as they have, with much more power to do harm—or he attempts to associate with those above him in circumstances, though only equal in acquirements, and, failing in the attempt, sinks down to his former social level, soured against society, and prepared for any act of outrage. The petty pilferers are for the most part supplied by the destitute and uneducated class; the more daring and dangerous offenders by those who have moved in a more affluent sphere, and fallen from it by their imprudence or vices. The lesson conveyed by the different degrees of education possessed by Scotch and English criminals, is the necessity of educating *classes* as well as individuals.

When we come to speak of educating classes, we are brought to the consideration of their economical condition. In Bristol, an inquiry into the educational statistics of the city showed that, out of nearly 10,000 adults, taken indiscriminately among the working-classes, 22·5 per cent. could neither read nor write; 25·6 could read only; 51·9 could read or write. In a wretched part of the parish of Marylebone in London, it was found that 25 per cent. could neither read nor write, and 75 per cent. could either read, or read and write; and in two other portions of the same parish, inhabited principally by Irish labourers and their families, 49 per cent. could neither read nor write, and only 41 per cent. could read, or read and write. Among 1022 able-bodied and temporarily disabled paupers above the age of 16, the inmates of several Union workhouses in Norfolk, Suffolk, and Kent, whose attainments were ascertained with precision, 46·5 per cent. could neither read nor write, 18 read imperfectly, 30·2 read decently, 5·3 read in a superior manner; and of the same, 66·4 could not write, 15·4 could write imperfectly, 16·9 write decently, and 1·3 write well. It would appear, then—taking statistics in their present imperfect state as our guide—that poverty and want of education, as well as crime and want of education, are intimately if not inseparably associated.

On the last point it is necessary to guard against a misconception. There may be a district poor in resources and with respect to the style of living of the inhabitants, and yet crime may not abound in it. The department of Creuse is one of the poorest in France, yet it presents the fewest crimes. M. Quetelet draws the important distinction, that a set of people living steadily on small means, but knowing no better, and contented with what they have, are not poor, in the sense in which a people are poor who, seeing wealth and luxury around them, and exposed to the severest sufferings from the occasional failure of employment, are thereby demoralised.

EDUCATION.

Till within the last few years, the idea commonly entertained with respect to general elementary education, comprehended only certain branches of instruction familiarly known by the terms *reading*, *writing*, and *arithmetic*. A 'liberal' education added ancient and modern languages and mathematics. Such formed the entire round of accomplishments which were supposed, with the accident-directed moral training of the domestic circle, to be sufficient to fit the youth of even the highest classes for entering upon the varied duties of life. Nor was this scanty education thought requisite for all. A vast class was allowed to exist without the least tincture of school learning of any kind, as not being supposed to require any knowledge beyond that which immediately fitted them for the laborious duties by which they earned their bread.

The active period which has elapsed since the conclusion of the last war (1815), has been distinguished by nothing more than by the enlargement of our ordinary ideas with respect to education. It may be said to be now universally acknowledged that all—all, from the peer to the peasant—ought to be educated, however there may still be differences of opinion as to the *means* of educating, and what education should *consist of*. It is also generally admitted that *reading*, *writing*, and *arithmetic*, even when effectually taught, constitute but a branch of education, being merely instrumentary accomplishments, the acquirement and cultivation of which tend in a certain degree to improve the intellect. The study of the ancient classical languages, while still admitted by candid persons to be also a means of improving the intellect, is now no longer upheld, excepting by a few, as the grand instrument of liberal education, the character in which it was generally regarded a few years ago. It is now seen that this study gives to the youth of the middle and upper classes but a portion, and in many instances not the most requisite portion, of what they should know on entering the world. The old elements of education may therefore be said to have sunk from their former character of all-sufficiency, and to have now taken their place as only parts of a complete education.

The primary meaning of the term *educate*, from the Latin *educare*, to lead or bring out, does not ill express the first great principle of the science. It may be held to assume that the human being is naturally in a comparatively rude and inert condition, and that external forces must be applied to draw forth his faculties into their full activity and power, and bring them to their highest degree of refinement and nicety of application. This is, in reality, a large part of the business of education, taking even the widest view of its purposes. A full definition would further include the regulation and discipline of those moral feelings on which our actions are mainly dependent, and also the communication of such sections of knowledge as the circumstances and prospects of individuals may render necessary.

Before correct views can be entertained with regard to education, or proper steps can be taken for working it out in practice, it is obvious that a distinct notion ought to be attained as to the character of the being to be educated. Man is this being; but the question 'what is man?' is one to which science does not yet enable us to give an answer that all would acknowledge as right. For this reason it is totally impossible for any writer to present a theory of education which would be generally received as a perfect science. The subject must needs partake of the obscurity and uncertainty which as yet rest upon at least the mental character of man; and it will only advance in clearness and precision in proportion as progress is made in a correct system of mental philosophy.

While fully acknowledging the difficulty under which every candid writer on education must lie, the present would humbly endeavour to make the nearest approach to a correct system which his views of the natural character of the human being will admit of. He considers the race as exhibiting a definite mental constitution, in all its parts harmonising with the surrounding universe. He considers this constitution as embracing a variety of faculties, for sensation and action, which it is the business of the educator to awaken, strengthen, and regulate, so that each person may arrive at the best condition of which his character is susceptible, and most thoroughly fulfil the design of his being in all its various respects. He views, in the first place, the faculties of the physical frame as requiring to be duly exercised, so as to bring them to the utmost limit of their native power and health. Of the mental system, he views those faculties which constitute the intellectual powers as requiring to be drawn out, exercised, and instructed, so that they may operate readily and efficiently for all the various purposes which they are designed to serve; and those, again, which constitute the moral feelings as calling for the exertion upon them of all external moral influences—at the head of which stands the revealed will of God with regard to human destiny—in order that the best possible state of feeling may be attained with regard both to the affairs of the present and to a future state of existence. Upon these views of man's character a scheme of education may be founded, which rational persons, as yet unprepossessed by other notions, will, he thinks, generally acknowledge as accordant with common sense, however unprepared they may be to trace it to its foundation. He will therefore, without further preface, proceed to describe such a scheme, adopting the appropriate divisions into *physical*, *moral*, and *intellectual*, and combining, as far as his space permits, practical directions with what may be called the philosophy of the subject.

PHYSICAL EDUCATION.

The object of physical education is to insure, as far as possible, that sound and vigorous frame of body which, while all must feel it to be one of the greatest of blessings, appears to be an essential concomitant of a sound condition of the mind itself. Physical education comes into operation before any other department, for one of its first concerns is to take care that the human being shall be brought into the world in the enjoyment of a perfect organisation. The mother is here the educator. She is required, during pregnancy, to order her life, with respect to food, dress, and all other habits, according to certain rules, found to be conducive to the welfare of her future offspring. Judicious medical men recommend that at this time the food taken should not greatly differ from what is taken at other times. The dress should be loose and easy. Moderate exercise should be regularly, as far as possible, indulged in; and it is of the greatest consequence, that while ordinary duties are attended to, a quiet, cheerful, and easy state of mind should be maintained. Departure from these rules, indulgence in late or otherwise irregular hours, and exposure to the excitements produced by violent passions, or the frivolities of fashionable life, are calculated to occasion deplorable effects on the being yet to be brought into the world.

Infancy.—The physical education of an infant involves simply the means of keeping it in health. For this purpose nature has made one signal provision, in

the tenderness which she has infused into the female heart—a feeling which insures an unfailing kindness towards the young. But something besides kindness is required to rear children successfully. It is necessary that those who have the duty of nursing the young, whether mothers or substitutes for mothers, should have some knowledge of the physiology of the infant body, or at least be acquainted with the rules of management which result from such a knowledge. The sad effects of ignorance on this subject are sufficiently conspicuous; for we cannot doubt that, of the great mortality of the young (about four-tenths of them dying under five years of age), much is owing to erroneous methods pursued in the nursery.

Here the leading rules only can be indicated. An infant should never be plunged into cold water, or exposed in any other way to cold, because, the circulation being comparatively languid in the infant subject, he can less endure cold than grown-up persons; and an attempt to produce hardiness may only undermine health. It is of the greatest consequence that an infant should be kept constantly clean and dry, that its hours be early and regular, and itself be as far as possible habituated to a periodic recurrence of all its wants. The mother's milk is the most appropriate food; next, that of a nurse about the same time confined; next, cow's milk warmed and diluted. Farinaceous, or any other kind of solid food, is unsuitable to the stomach of an infant under six months old. A child ought, if possible, to be nursed about eight months, and somewhat longer if weakly, or when the period of eight months terminates in the dead of winter. After weaning, the food should be farinaceous—that is, of substances composed of grain, potatoes, arrowroot, &c. Animal food should be avoided till the period of infancy may be considered as nearly at an end, and even then it should be of the tenderest fibre, and administered in very simple forms and moderate quantities.

The food and general habits of the nurse are of great and direct importance. The child is immediately dependent in all respects upon the person who suckles it; thrives with that person, and also declines with her; suffers when she suffers, and is well when she is well. So remarkably is this the case, that an act so simple on her part as the taking of a hasty draught of cold water, will probably give the infant a stomach-ache within two hours. It is therefore of the greatest consequence to the welfare of the young, that those from whom they draw their sustenance should observe all the rules proper to their condition. A nurse should live a quiet and regular, but not inactive life, using simple wholesome diet, avoiding stimulating drinks, and preserving, as far as possible, a cheerful mind. Fermented liquors, as porter and ale, are only to be resorted to when her strength would otherwise sink under exhaustion of her system. In ordinary health, a light beer is perhaps the most suitable beverage.

For the due development of the muscular system of an infant, its dress should sit light and easy upon its person, and its limbs should be allowed free play on all possible occasions. The restless movements of an infant, the tossing about of its head, arms, and limbs, are to be considered as merely impulses of nature, directing it to exercise, and consequently strengthen, its muscular system. These movements should therefore be rather encouraged than repressed. Care should be taken that it is not too soon allowed to bear its own weight, as the natural consequence is bending the as yet soft bones of the legs, which may thus become deformed for life. Whenever a child of proper age is unable to bear its own weight, or walk without this effect following, we may be sure that its general health is defective; and it is a more immediate and pressing duty to take measures for remedying this defect, than to attempt to keep the limbs straight by mechanical appliances.

The general health of an infant may be described, in a word, as to be secured (supposing a good constitution at first) by food appropriate to its organs, warmth, cleanliness, regularity in sleep and other wants, a well-aired nursery, and occasional walks out of doors, protection from all injuries through the medium of the nurse and otherwise, and the muscular exercise of which its system is capable. (1)*

Childhood, Youth, and Manhood.—Physical education ought to be continued till the body is brought to the utmost degree of perfection, in all its functions, of which it is capable. The improvement of all the systems and functions of the body may be called the *education* of these systems and functions; hence recent writers on the subject speak of the education of the skin, the education of the lungs, of the digestive organs, of the muscular frame, of the brain.

In a former number of this work—that on the Preservation of Health (No. 45)—most of the matters which fall under Physical Education are carefully treated. By reverting to that paper, the reader will find of how much importance must be the formation of habits of bodily cleanliness, seeing that the skin is a system which only can have a healthy function when it is thoroughly free from impurities, and that nothing is more indispensable for general soundness than the particular health of this part of our frame. In the same paper, the value of a due supply of pure air for the health of the respiratory organs is insisted on; as also the proper regulation of the appetite for food. The education of the muscular system implies a competent knowledge of the structure, attachment, and conditions of action of the muscles; the operation of arterial blood and nervous influence on the muscles, and other matters, for which we refer to our number (8) entitled Animal Physiology—The Human Body.

Under this branch of physical education falls all the science of exercise—walking, riding, running, leaping, swinging, skating, dancing, fencing, cricket, ball-play, &c. The importance of these to health, in the full development of the muscles and improvement of the frame, has long been known, and by some nations steadily practised. The perfect forms of the Greeks and Persians were the result of this branch of education receiving a large share of national attention. Ample provision for such exercises should be made in all seminaries of education, infant and more advanced. What are strictly called gymnastics are more violent and trying than any we have mentioned, consisting of climbing poles, leaping bars, swinging by the hands, and maintaining difficult positions. These require much caution in the watchful educator, and should not be allowed in slender and weakly boys. They ought not to be overdone by any youth whatever, seeing that, even in the robust, strains and ruptures have been occasioned by them. (See Gymnastics, No. 95.)

MORAL EDUCATION.

The training of our moral nature for the due performance of our part as members of society, is that branch of education which the great majority of those who have reflected on the subject consider as by far the most important. It is a great mistake to suppose that this is a branch which the advocates of improvements in education have generally overlooked. As far as we have observed, all but a small sect of this class of philanthropists acknowledge its paramountcy. This is the part of education which, in a national system, would call for the most attention, because, while degrees of intellectual attainment are proper for different classes of men, there is no class of whom it can be said, that a *right and perfect moral development* is not of the utmost consequence both to themselves and the society of which they form a part. Beside such a benefit, that of an acquaintance with the mere elements of literature sinks into insignificance. There is no need,

* The numbers introduced in this manner refer to volumes of *Chambers's Educational Course*, according to a list (as far as published) given at the close of the section 'Intellectual Education.' It will be understood that the volume referred to either treats that department of the theory and practice of education fully, or is a school-book in which the subject is embodied.

however, to exalt any department of education at the expense of another. It may be true that intellectual development is not expressly moral development; but it must be clear to every candid person that the refinement and expansion of mind obtained from intellectual culture are favourable to the moral nature. A thinking man is not on that account likely to be the less a virtuous man; else much of our common observations of life must be a blindness and delusion. We would therefore say, let no department of education be considered as calling for exclusive or disproportionate cultivation; but let all go on in harmony together.

Moral education can have no definition from us but the development and regimen of the moral nature of those who are to be educated. Of the perplexity which attends this part of our being, it is unnecessary to speak. Let us only see if we can settle upon any principles by which it may be beneficially affected. It appears to include a variety of native feelings, of various strength and tendency to activity in every different person, yet all of them liable to be acted upon by appropriate external means, to good as well as to evil. In a mind totally untrained, the good dispositions are not without some energy; but generally, where there is a want of regulation of the feelings, and of certain principles to which the character of emotions and actions may be referred as to a standard, the moral being is a scene of deplorable confusion—the more so, of course, in instances where there is a considerable natural endowment of the inferior feelings. We have then the coarse, sensual, and selfish conduct which has been the mark of the rude and uneducated throughout all ages. On the other hand, we cannot doubt that many natures, not originally of a high cast, thrown under influences which tended to check the less worthy tendencies, to strengthen and develop the good, and to induce regularity over all, must have been thereby enabled to pass through life in a creditable manner, if not with some higher result less open to observation.

One principle thus strikes us at the outset as of very great consequence—namely, the circumstances, or, so to speak, the moral atmosphere, in which the being to be educated is placed. It is but matter of every-day observation, that a child reared amidst gross scenes, where no restraint is imposed upon any of the feelings by those around him, will prove, in all likelihood, a very different being from one brought up amidst virtuous and gentle people. Such a difference, we cannot doubt, would exist even where no attempt has been made by the latter parties to fashion the moral character of the young creature committed to their charge. It is exactly a difference of this nature which exists between the youths native to the vale of the Missouri (or those of the not less savage classes which social circumstances produce in most great cities) and those of civilised countries in general: circumstances decide the one set to be barbarians, and the other to be tolerably well-behaved persons. This *education of circumstances*, though so powerful, is unfortunately not always within the command of well-meaning parents. Individuals are here generally able to do little of themselves, if the persons by whom they are necessarily surrounded be not of the character that is desirable. Thus it often happens that a poor though well-disposed man is obliged to live in a part of a city where his children can only breathe moral contamination; and we can scarcely imagine a greater hardship. Yet these are just reasons why every effort should be made to promote a universal improvement of society; and it must rarely happen that some arrangements cannot be made, of a character likely to operate favourably on the young persons who are the objects of care.

We would here impress the importance of removing *temptation* as much as possible out of the way of young persons. There is a notion amongst some that a little temptation is not amiss, as a means of training the young to withstand greater assaults. But this is, we are convinced, an ill-founded doctrine, and most fatal policy. It is of the nature of every one of our feelings to be awakened into activity by the presentation of its appropriate object; and it is the equally natural result, that the frequent activity promotes the power and the tendency to activity of those feelings. By presenting, then, what are called temptations, we are taking a direct means of educating and strengthening the inclinations towards error. On the contrary, a feeling allowed to lie dormant, loses in power, and becomes always less and less liable to act. There is perhaps a confusion of ideas at the bottom of the objectionable theory. The true plan seems to be to remove all actual temptation, but to give the intellect and the moral feelings proper warning against all such dangers, and thus prepare them for resistance when the time of unavoidable trial arrives. We would say, then, do not allow the young to see or touch evil things, or even to be in company where such things are to be spoken lightly of, from an idea that they are thus to be hardened against temptation. Be content to inspire a salutary horror of such things by your own report, if you only are so fortunate as to be able to keep your young charge exempt from positive contact with what is discommendable. An error may of course be committed in speaking too strongly against what you disapprove of, in which case the young person no sooner discovers the exaggeration, than, from a principle of contradiction, he is inclined to embrace the vice. But discretion will save from this mistake. Upon the whole, it may be set down as a most important rule in education, to reduce temptation within the smallest possible bounds.

Nearly connected with the education of circumstances is the *education of example*. Here personal conduct in the educating party is all in all. Children are remarkably disposed to imitation. They imitate instinctively, without having necessarily any discrimination of the character of the act which they are imitating. The general nature of their conduct is therefore ruled very much by the nature of the conduct presented to their observation. So much is this the case, that if a child be carefully watched, he will be observed to contract a tendency to scolding and beating, from that very discipline by which, most erroneously, an endeavour is made to correct his errors. It must obviously, then, be of the greatest importance that the demeanour and general actions of the educator, and of the family in which a child is reared, should be models of all that is proper. Just the more amiable and correct in all respects that this conduct is, so will the young be the more likely to form those habits which their best friends could wish. We will not pause to consider the effect which a positively vicious course of life is calculated to have on such of the young as witness it. The kind of bad example which we have here a chance of helping to abolish, is that which shows itself in acts far within the circle of positive vice. Such are the use of offensive and uncivil language, wranglings, domineering, low and sordid habits of all kinds. If parents and the other grown-up members of a family do not restrain themselves from all such acts in the presence of children, there cannot be a doubt that the children will likewise be addicted to them. It may be a somewhat startling doctrine, but we nevertheless declare our full conviction that there is not the least need for ever using, in the presence of or towards children, any language which might not be addressed by a well-bred person to a perfect equal. All ordering, dragooning, scolding, and, much more, all violence, exerted for the purpose of managing, or punishing a child, are unmitigated errors and evils. A child has feelings to be wounded and roused up into contradiction by harsh usage, as well as any grown-up person; and it is well known that such means are not serviceable for gaining any end with our fellow-creatures. A civil request, if reasonable, will succeed with a child as with a man. Gentle and respectful language gain as much upon an uncorrupted child's nature as upon a man's. Such treatment can have no chance of *spoiling* a young person: it will only tend to his advancement as a rational well-bred being, instead of making him a wrangler or a tyrant.

The *preceptive part* of moral education, though the lowest in power, is not to be overlooked. A good maxim or a sound advice, well-timed, and made thoroughly intelligible and thoroughly acceptable, will rarely fail to have a good effect. Even supposing it to be little regarded at the time, it may remain in the memory, and come into play on some future occasion, when perhaps more necessary than now. In such moral seeds there is a vitality like that of the seeds of plants, which may have been buried too deep for germination for thousands of years, and yet, when placed in the proper circumstances, visited by sap and heat, will send up as goodly specimens of their kind as if they had been shed from a parent stem of last year's growth. It will therefore be proper, from time to time, to inculcate moral lessons appropriate to the capacity of the child. This may be done directly, by giving good maxims to be learned by heart; but it will be done better by means of narratives showing the virtues in action. This is because a child much more readily apprehends a series of incidents than an abstract truth. It will also be well to allow the simple narration, in the first place, to be received into his mind, and then to allow himself, if possible, to make out the moral. Call his own moral feelings, as far as may be, into judgment upon the case, and only tell him whether he is right or wrong, till he fully comprehends it in all its bearings. Thus his own good feelings, as well as his judgment, are brought into exercise, and thus a far deeper impression is made than if the whole case, including the moral, were merely related to him. (?)* It is a duty of preceptive education to warn against and check evil, as well as to inculcate good. When anything wrong is done, we but imperfectly correct it by saying, 'Don't do that,' or inflicting censure or punishment. It is necessary that we should convince the understanding and move the feelings of the child to a sense of the impropriety of his conduct. This may be done by mild argument and illustration, calling upon himself ultimately to say whether such conduct is commendable or not, and whether it ought to be repeated or avoided. He thus becomes judge upon his own case, and is forced to condemn himself, where, if condemned by others, his opposive feelings might have only presented resistance and defiance. At some schools, including those for infants, it has been found possible to impress such lessons by means of a kind of trial, the schoolfellows being the jury. The case is stated to the assembled children: they are asked to say if such conduct is right or wrong. They invariably give a sound decision, and the effect is most powerful. Obdurate natures, to which a reprimand from master or parent would at the moment be as nothing or worse, are found unable to resist the force of the *public opinion of their own society*—as is every day found to be the case with grown-up people, such being, in fact, a law of human nature.

Circumstances, example, precept, are all inferior in effect to *Training*, which is more particularly the novel feature of modern education. This principle may be said to have its natural basis in the law of habit. It is indicated in the text, 'Train up a child in the way he should go, and when he is old he will not depart from it;' and in the maxim, 'Just as the twig is bent, the tree is inclined.' We are so constituted, that when accustomed to do anything, we do it almost without the governance of our will or judgment. We do it easily, and generally well. If accustomed, for instance, to a particular class of intellectual operations, we acquire a facility in going through them which generally strikes others with wonder. If accustomed to the exercise of a particular class of feelings, be they good or bad, they in time awake unprompted, and we become their almost passive instruments. To habituate the feelings to the exercise and regulation which is productive of the best results, constitutes moral training.

* The Moral Class-Book, here referred to, supplies a variety of narratives, showing the virtues in action, together with a selection of moral maxims from Scripture and other sources.

The feelings are of very various character. Proceeding upon Dr Gall's description of them, which seems to us to be the best, we find the first class described as selfish, yet necessary for the preservation of the individual and the species; others directed to objects apart from self, yet as liable also to misdirection and abuse. It seems altogether a strangely-mingled web, yet not without a certain definiteness of constitutional arrangement and of purpose. Here it may be at once admitted, as a fact not less obvious from philosophical inquiry than from revelation, that perfection in the complicated operations of our moral nature is not to be looked for. It is equally certain, however, that there are influences which may act advantageously in regulating, directing, and harmonising these operations.

The selfish or lower feelings are the first in the individual to call for attention, and they may therefore be first treated in this place. That early developed instinct which regards food is so liable to be over-indulged by a mistaken kindness, that we feel particularly called upon to give a warning with regard to it. The unavoidable effect of such over-indulgence is to produce pampering and fastidious habits, equally degrading to the moral as they are dangerous to the physical system. The food of the young should never be otherwise than simple, if we were merely to regard their health; still more should it be so, if we would preserve in them manly and hardy habits. On the rare occasions when a little treat is afforded, care should of course be taken that it is of a nature in all respects harmless. Comfits should be few and far between, if ever given at all; and rewards and punishments should never have reference to edible things. As to liquor of any kind, such as men are themselves but too much accustomed to indulge in, certainly one drop should never enter the lips of a young person on any pretext whatever. There are few sights more distressing to a reflecting mind, than that of parents handing the so fatal wine-cup to their children. The quantity of food given to the young should never be stinted from penurious or ascetic motives; but it is very certain that great errors are committed in giving too much and too frequently. Eating is altogether much a matter of habit, and that with regard to quantity as well as quality. The amount actually required for the efficient support of the system is, under natural circumstances, not great: it is generally much exceeded. There is therefore room for a judicious restriction, within the range of common practice. It is but a result of the general law, that a systematic moderation at this period of life will lead to an easily-maintained temperance in future days, and thus be productive of the greatest blessings.

The combative and destructive dispositions of children are also early manifested. The great activity of these faculties in boys is particularly remarkable, being shown as much in a wild spirit of adventure, for innocent objects, but often leading into danger, as in any direct form of violence. The superabundant vitality of this period of life seems to be a cause, or at least a necessary accompaniment, of the energy of these faculties. No peril intimidates; little compunction is felt in dealing with either man or beast. In all this there is no doubt a good end in view; but it still remains for the educator to regulate these dispositions. The *contendative* spirit may be directed to the overcoming of difficult tasks, the taking of energetic exercise, and the visiting of places and objects the examination of which may be useful. The other feeling, instead of being allowed to show itself in rage, passion, and resentment, to inflict pain on harmless animals, to torture or oppress companions, or take delight in defacing and destroying inanimate and perhaps ornamental or useful objects, may be trained to reserve actual manifestations of its energy for objects clearly noxious. It is to be lamented that education, as heretofore, and still in many places, conducted, rather tends to foster than to regulate or moderate this propensity. The old notion, that to be able to fight is essential to a youth, still, we fear, in some measure guides directors

of education, at least so far as to induce their taking little pains to prevent scenes of outrage where only youthful good-humour and kindness should prevail. The oppressive system of fagging is also still, to the disgrace of our age, allowed in some of our public seminaries. It is well, no doubt, that he who is to find life a thorny and difficult path, should not enter it with too gentle or timid dispositions; but surely it is not impossible to draw a distinction between quarrels, blows, and tyranny, and the encouragement of a spirit sufficiently manly and energetic for all the common needs of our social existence.

The first object of the educator with regard to these feelings, ought to be to impress the lesson that their exercise is good or bad just as they have good or bad objects in view—that they must in all cases be under the guidance of the moral sentiments and judgment. The pupils should be trained to check every impulse of these feelings which they are conscious has not a legitimate object in view, and only to allow them any freedom when careful reflection has satisfied them that such a course is entitled to the entire sanction of the moral law. Particular regard should be paid to the suppression of the spirit of wanton cruelty, of malice, of revenge, of uncharitableness. And one important means of working out these ends will be to allow no example of harshness, cruelty, or quarrelsomeness ever to appear before the eyes of the young. It is very desirable that those who conduct schools in which the children of the humbler classes are educated, should address themselves particularly to the formation of habits favourable to humanity. Large sections of the humbler classes, particularly those who have anything to do with animals, are habitually cruel. Much might be done to mitigate this distressing characteristic by carefully impressing at school the wickedness involved in every description of cruelty to animals.

The secretive disposition calls for a large share of attention from those who would bring up a child well. This tendency of our nature appears to have a legitimate operation in dictating such a reserve as may be necessary for the restraint of our ordinary feelings, where their expression would be disagreeable or mischievous; but it is liable to great abuse, and particularly amongst the young. The first impulse of all unregulated minds, young and old, is to conceal the truth, if such expedient seem calculated to save them any harm or inconvenience. It is only when the greater evil of lying is thoroughly understood that this tendency ceases. It becomes, therefore, of great consequence to check the first instances that are observed in the young of a disposition to conceal the truth for selfish or base purposes, and to seek to establish principles and habits of a contrary character. For this end nothing is so necessary as a mild and just treatment of children under all circumstances; seeing that when severity or injustice is to be apprehended, a direct and far too great temptation is given for secretive conduct.

It is difficult to legislate between the evils of blabbing, and the equally notorious evils of a habitual system of conspiring for the concealment of truths which conscientiousness would direct being told. There can be little doubt that the '*don't tell*' practices of the nursery and school are calculated to implant and foster the seeds of disingenuousness in the youthful mind. Yet it is not less true, that to encourage a tale-bearing habit would be destructive to all manly and honourable feeling. Here caution, judgment, and a careful discrimination of cases, must be the chief guides of the educator. We would for our part deem it a duty to lean as much as possible to the principle of having the truth told at all hazards. The educator may do much by a rigid system of inspection, and omitting no opportunity of breaking up all confederacies against the truth. As he never will allow *shirking*, if he can help it, so also he will never, on his own part, be guilty of the meanness of *winking*. The more open and candid his own conduct in all his relations towards his pupils, the better will it be for them. There exists a school on improved principles, where the most lively mutual confidence exists between the masters and their pupils, and on the part of the pupils towards each other, with the best effects on all hands. Honour is thus so habitually observed, that the desks containing the little property, letters, &c. of the pupils need no locks. There is much evil in families from children being brought up in non-confidential habits with their parents and with each other. The family parlour and table should be a scene where all can unfold their ordinary thoughts without fear of censure or ridicule. It is the best means of insuring that the young people will act with the concurrence of their parents, when they come to take any of the more serious steps of life.

The acquisitive feeling requires much more educational care than it has usually received. We need not detain the reader with an exposition of the legitimate use of this faculty, which prompts man to accumulate or store up the goods of life, for regular instead of precarious use. To this impulse capital owes its existence, without which there could be no civilisation. The Author of our being has stamped importance on this faculty, by the strength of the propensity. None more requires modification, regulation, and right direction. It is often too strong for conscientiousness, and is the source of by far the largest amount of crime. But, besides this, it is even with the honest too much manifested in abuse. Its objects are made the paramount pursuit of life, and in its intense selfishness it withers to dust every generous and kindly feeling of the heart. In a commercial country like our own, it deeply degrades a large proportion of the community, and leads to much individual and social suffering.

These evils are the consequences of the natural strength of this feeling, the absence of regulating education, and the presence of positive mis-education. Selfish and exclusive appropriation of desirable things, either to eat or hoard, is a lesson taught the youngest, both by precept and example; and there is none more easily learned. Here bribery operates, till infant morality becomes mere matter of barter, and good conduct and attentive study are estimated by the infant merchant by what they will bring. Perhaps we err in so soon introducing children to the use of money; it is at least desirable that they should not be accustomed too soon, or at any time, to an engrossing sense of its value and importance. It is well to accustom them to take care of anything that is their own, but not to set too great store by their little possessions, or to be too exclusive in the use of them. A habit of scrupulous regard to the distinction between *mine* and *thine*, is one which cannot be too early formed, at the same time that children are accustomed to make a generous use of whatever is their own.

Self-esteem and love of praise or approbation are early awakened feelings, and the more call for regulation that they are so liable to be called into exercise by the procedure of education itself. Here it is particularly important to keep in mind what are the legitimate uses of these feelings. A well-regulated self-esteem obviously gives that confidence in ourselves and our powers which is necessary for all our efforts in life; while a moderate regard to the opinions of others is useful in prompting to such efforts, and in restraining us from many displays of caprice and absurdity to which we should otherwise be liable. It will of course be well to encourage these feelings, as far as they tend to give necessary confidence, and to maintain a decent regard for character in the world, but no further. Their vices, pride and vanity, too much reliance upon self, and too abject a regard to the world's opinion, are to be sedulously guarded against. In the procedure of education, they are so readily available as means of stimulating to exertion, and encouraging good (that is, not troublesome) behaviour, that it is not surprising that they are so extensively made use of for those purposes. The whole system of place-taking, prizes, medals, &c. is founded on them. It cannot be doubted that educators are thus guilty in many instances of

fostering invidious and even destructive feelings in those under their charge; the whole system is unquestionably a selfish one. Feeling strongly these objections, some modern educationists advocate the entire abolition of all marks of *emulatively comparative* proficiency or good behaviour at school, retaining only an accurate register of individual advancement, to enable the pupil to mark his own progress. Theoretically this is right; and we may hope that, when education is fully organised on a right footing, and supported by an improved adult society, the whole system of competition, including every kind of rewards and punishments, will be dispensed with. Meanwhile we must leave educators to act on these points according to their best discretion, only strongly recommending them to dispense as far as possible with all these inferior, and, to a certain extent, degrading and corrupting influences.

Cautiousness—a feeling intended, in its right direction, to prompt to foresight and the avoidance of unnecessary dangers, but in its excess, pusillanimity and cowardice—calls for a careful treatment. Amongst unthinking persons, it is mere sport to frighten children with narratives, objects, and exclamations calculated to inspire terror. Thus their imaginations are filled with bugbears, which harass them constantly, and make it the severest punishment to be left at any time alone, or to be in the dark. In cases where a predisposition exists, the most serious consequences sometimes flow from this irrational treatment. An enlightened educator never allows an ideal terror of any kind to enter the mind of his child or pupil. As the feeling may be strong or weak in the particular case, he seeks to moderate or to foster it, giving encouragement and stimulus if it be defective, and prompting to caution if it be otherwise. He carefully impresses the lesson that danger and hazard may be laudably encountered for a good object, but that it is folly to undertake the least risk when no end is to be gained by it. For example, he would approve of his pupil perilling his own life to save a friend from drowning, but not of his going across a lake thinly frozen, merely to make a demonstration of his courage.

The selfish feelings appear in a natural subordination to those which are usually called 'higher,' and sometimes, by excellence, 'the moral sentiments.' These are what mainly give the characteristic, 'goodness,' to an individual, and so rule the social machine, that general movements are usually of a virtuous character, and vice is obliged to remain in nooks and corners, or put on the garb of virtue when she appears. It is to the proper training and regulation of this class of feelings that the educator chiefly looks for the result he aims at—namely, the right formation of character.

Conscientiousness, the conscience, the moral sense, or by whatever other name it is called, is that innate feeling which gives the disposition to follow right and avoid wrong in all circumstances. To bring this feeling into its full force, it is necessary to train it with the aid of intellect to lend it discrimination. The pupil must be accustomed to observe its rules, as to the property of others, their reputation, their comfort and happiness, the right decision of every question in which their interests are concerned, and also with regard to the truth in all things. He thus becomes fixed in equitable, disinterested, and ingenuous habits, beyond all the powers of ordinary temptation. It will be no exercise to this sentiment to tell the young to avoid certain acts, because they are mean, and only practised by the vile, or because they will procure universal odium. That is an appeal to love of approbation, not to conscientiousness, to the development of which it will be rather unfavourable than otherwise. To fortify conscientiousness against what is wrong, we must directly address itself, by an endeavour to show the actual unjustness or baseness of any particular course of conduct, or the integrity and purity of the opposite; taking care to induce an act positively conscientious on all possible occasions, as in the acting upon a sentiment does the means of improving it chiefly lie.

So also with benevolence. We must not content ourselves with presenting ideal pictures of the distresses of our fellow-creatures to the minds of the young, thinking that to excite their commiseration is enough. We must endeavour to induce them to perform *acts* of kindness and charity—we must endeavour to make them give, from their own means, or at some expense of self-denial, succour to the unfortunate; and for this reason it will be proper that they are occasionally brought to witness cases of actual suffering, and made to administer relief with their own hands. It was a beautiful old custom of Christian princes and princesses, to have a number of poor persons occasionally brought before them, that they might minister to their relief and comfort by washing their feet with their own hands. It was its least good effect to humble rank to the level of mortality: the better one was to give activity to the sentiment of benevolence, too apt in such persons to become dormant, from their very elevation above all spheres in which human suffering exists. Benevolence is also to be shown in what is called an obliging disposition, a readiness to sacrifice ourselves and take some trouble whenever our doing so can at all promote the happiness of our fellow-creatures. It is likewise shown in mercy towards the weak, including animals, and in a forgiving placable temper. 'Teach your children,' says Mr Goodrich in his admirable treatise entitled "Fireside Education," 'never to wound a person's feelings because he is poor, because he is deformed, because he is unfortunate, because he holds a humble station in life, because he is poorly clad, because he is weak in body and mind, because he is awkward, or because the God of nature has bestowed upon him a darker skin than theirs.'

Justice and kindness to others have a worthy associate in respect or veneration for others who are of superior worth, and for superior objects in general, including the objects of religious faith. This is also a native sentiment of the mind, and one which sends a beautiful light throughout the world. The scoffing and undervaluing propensity is its opposite—a disposition rarely found associated with estimable qualities. The sentiment of veneration is that on which all social grades depend; it is the spirit of subordination itself. It is a folly when exercised with regard to mere artificial rank unattended by worthy qualities; but with regard to persons elevated either by their native good qualities, or the function which has been intrusted to them to execute, it is as much due as is our pity and succour for the unfortunate. It is perhaps this feeling which chiefly gives a regard for the feelings of others; for we must think our fellow-creatures of some consequence, before we will be disposed to go out of our way on their account. The feeling, therefore, eminently deserves the care of the educator; but great pains must be taken to give it right direction. We must teach the young to discriminate judiciously as to objects really entitled to their reverence. It may here be remarked, that the feeling of veneration is one which may prove of great importance in certain contingencies to which the educator is liable. When a child has been indulged or mis-trained to such an extent that he defies all the reins to which he has been accustomed, it will generally be found that removing him to a new scene, and into the charge of individuals who, whether from their character or from the force of novelty, excite the veneration of the young delinquent, is attended with a good effect, which it only requires firmness, discretion, and kindness on the part of the new teacher to follow up, for a complete reformation.

The above may be said to be the natural means of cultivating and forming the moral character of those intrusted to our hands. And these natural means are of great consequence, and entitled to all the respect we can give them; for they are in reality means of Divine appointment, designed to serve in the great work of mutual improvement. But the most powerful means of modifying human character is that other revelation which has come to us in a more direct manner, and

which is fully disclosed in the pages of Scripture. As soon as this can be made intelligible to the young, it should be imparted, not under those rudely familiar circumstances which too often attend religious education in the school-room and at home, where the child is conscious of little besides a struggle to commit certain texts and dogmas to memory, but in the quiet of confidential converse, when the thoughts are called home, and the soul is open to awe, love, hope, and all the gentler emotions of our nature. Then may we hope to convey some just impressions of the grand yet tender relation in which man stands to his Creator, his destiny on earth, and the appointments for the future. Then only may we hope to impart just feelings with regard to the inscrutable scheme on which the weal or wo of an eternity depends. It is obvious that, if we succeed in these things, we must awaken in the moral nature a self-sustaining influence infinitely more powerful than precept, example, training, and all the other natural machinery of a moral education. Yet it should never be lost sight of, that neither means will singly be operative. Upon a mind which has been left rude and unregulated, the efforts which ultimately take the name of religious education can make little impression. The words which have been learned will probably remain only as words, without producing any real religious feeling, much less any improvement of conduct. Indeed, both the morals and the intellect must be cultivated to a considerable extent, before religion can be anything but a passing sound. There must be a prepared intellect to understand it, and prepared moral feelings to give it a reverential reception, and entertain its behests in the spirit due to them, not to speak of acting upon its precepts.

To recapitulate—the moral nurture of the young is to be accomplished by a variety of means: first, by placing them in a pure moral atmosphere, presenting what is good and nothing evil of human conduct before their sight, familiarising them with every sound precept, and giving their various feelings due regulation, exercise, and training; next, by imbuing them, under the circumstances most calculated to be effective, with those religious truths which so infinitely transcend all others in importance. In order to impress these lessons still more pointedly, we beg to append some express directions which we think may be advantageously followed in the management of the young, more particularly those at the infant stage:—

Anticipate and prevent fretfulness and ill-temper, by keeping the child in good health, ease, and comfort. Never quiet with giving to eat, or by bribing in any way, still less by opiates. For the first few months avoid loud and harsh sounds in the hearing of children, or violent lights in their sight; address them in soft tones; do nothing to frighten them; and never jerk or roughly handle them. Avoid angry words and violence both to a child and in its presence, by which means a naturally violent child will be trained to gentleness. Moderate any propensity of a child, such as anger, violence, greediness for food, cunning, &c. which appears too active. Show him no example of these. Let the mother be, and let her select servants, such as she wishes the child to be. The youngest child is affected by the conduct of those in whose arms he lives. Cultivate and express benevolence and cheerfulness; in such an atmosphere a child must become benevolent and cheerful. Let a mother *feel as she ought*, and she will *look as she feels*. Much of a child's earliest moral training is by looks and gestures. When necessary, exhibit firmness and authority, always with perfect temper, composure, and self-possession. Never give the child that which it cries for; and avoid being too ready in answering children's demands, else they become impatient of refusal, and selfish. When the child is most violent, the mother should be most calm and silent. Out-screaming a screaming child is as useless as it is mischievous. Steady denial of the object screamed for is the best cure for screaming. In such contests, witnesses should withdraw, and leave mother and child alone. A child is very ready to look round and attract the aid of *foreign* sympathy in its little rebellions. Never promise to give when the child leaves off crying; let the crying be the reason for not giving. Constant warnings, reproofs, threats, and intreaties—as, *let that alone—be quiet—how naughty you are*, &c. all uttered in haste and irritation, are most pernicious. No fixed or definite moral improvement, but the reverse, results from this too common practice. Watch destructiveness, shown in fly and insect-killing, and smashing and breaking, quarrelling, striking, &c. Never encourage revenge. Never allow a child to witness the killing of animals. Counterwork secretiveness by exposing its manœuvres. Regulate notions of property—one's own and another's. Never strike a child, and never teach it to strike again. Never tell a child to beat or threaten any animal or object. Corporal correction may be avoided by judicious substitutes. Set an example of cleanliness, order, punctuality, delicacy, politeness, and proper ease of manner. This is better than *teaching manners*, as it is called. Inculcate early, and manifest in yourself, a delicate regard for the rights of others and their feelings, in contrast with selfish vanity, arrogance, and exclusive attention to one's own ease, comfort, and gratification. Prevent all indelicacies and slovenly habits at table—touching the utensils, stretching for what is wanted, sitting awkwardly, &c. Study early to gain a child's confidence by judicious sympathy in its joys and sorrows. Have no concealment with it. Govern by love, and not by fear: the contrast between children governed by the one and the other is truly instructive. Never forget that kindness is power with man and beast. *The Arab never strikes his horse.* Cultivate truth, justice, and candour in the child, and manifest them in yourself. With a child whose firmness is apt to run into obstinacy, never contend; in doing so, you aggravate the feeling by manifesting the same feeling in yourself; and by further showing your combativeness, exciting the child's opposition. Divert the child from the object, and put in activity its benevolence, justice, and reason. Never frighten to obtain a child's obedience: threats of hobgoblins, and all false terrors, are most injurious in their direct effects, and being generally discovered to be falsehoods, operate most immorally.

We beg to conclude the section with the following remarks from Dr Combe's excellent manual for the management of infancy:—'It is a common and pernicious error in modern education, that the passions and moral emotions implanted in the human mind are the results of intellectual cultivation; that intellectual discipline will suffice to regulate them. Under this mistaken notion, parents are often disappointed and displeased with a child, when, after a full explanation of the impropriety of the feeling or passion, it still, on the recurrence of the temptation, gives way to it as much as before. I have known a father, under this false impression, lecture, and threaten, and punish his child, and take every way to correct it but the right one. Fortunately for mankind, however, morality and religion have a much more solid foundation than a mere deduction from an erring intellect. They are based on feelings implanted in the very nature of man, and which mere intellectual cultivation or neglect can neither generate nor destroy; and their real strength and authority will not be fully recognised, till they are cherished and developed in strict accordance with their natural constitution. Like the external senses, they must be habitually exercised upon their appropriate objects—in worshipping the true God, and in doing justice, and loving mercy—before they can attain their proper influence over the character, and their true authority in regulating human conduct. From almost the first hour of existence, this principle should be systematically acted upon, and the utmost care be taken to secure at all times a healthy moral atmosphere for the young. To do perfect justice to the infant, there is required,

on the part of the mother, a combination of cheerful activity, good sense, knowledge, readiness of resource, and unfailing kindness and impartiality, which is not often to be met with. But by aiming at a high standard, we shall make a nearer approximation to what is required than if we rest satisfied in indifference with whatever occurs. It is lamentable to reflect how numerous are those mothers who, from indolence or other causes, leave the entire control of their offspring to an unqualified attendant, and even themselves give way to expressions of anger or caprice, which cannot fail to act injuriously upon the infant mind. Let us, then, not deceive ourselves, but ever bear in mind, that what we desire our children to become, we must endeavour to be before them. If we wish them to grow up kind, gentle, affectionate, upright, and true, we must habitually exhibit the same qualities as regulating principles in our conduct, because these qualities act as so many stimuli to the respective faculties in the child. If we cannot restrain our own passions, but at one time overwhelm the young with kindness, and at another surprise and confound them by our caprice or deceit, we may with as much reason expect to gather grapes from thistles, or figs from thorns, as to develop moral purity and simplicity of character in them. It is vain to argue that, because the infant intellect is feeble, it cannot detect the inconsistency which we practise. The feelings and reasoning faculties being perfectly distinct from each other, may, and sometimes do, act independently; and the feelings at once condemn, although the judgment may be unable to assign a reason for doing so. Here is another of the many admirable proofs which we meet with in the animal economy of the harmony and beauty which pervade all the works of God, and which render it impossible to pursue a right course, without also doing collateral good, or to pursue a wrong course without producing collateral evil. If the mother, for example, controls her own temper for the sake of her child, and endeavours systematically to seek the guidance of her higher and pure feelings in her general conduct, the good which results is not limited to the consequent improvement of the child. She herself becomes healthier and happier, and every day adds to the pleasure of success. If the mother, on the other hand, gives way to fits of passion, selfishness, caprice, and injustice, the evil is by no means limited to the suffering which she brings upon herself. Her child also suffers, both in disposition and in happiness; and while the mother secures, in the one case, the love and regard of all who come into communication with her, she rouses, in the other, only their fear or their dislike.

INTELLECTUAL EDUCATION.

By intellectual education we hold it to be implied that the human intellect, originally a mere instrument ready to be exerted, requires, for the full development of its powers, and subsequently, for the ready use of those powers, the application of certain external stimuli, and the force and regulation of a certain discipline; also that the intellect, besides being thus improved in its own character and energies, requires to be possessed of certain knowledge and certain accomplishments, in order to a proper performance of the various duties of life. We shall not stop to make a nice investigation as to the various powers of the intellect and their modes of acting, but at once assume that, with senses serving as media for the access of impressions from the external world, it includes powers which can take cognisance of things, or perceive, and powers which can compare things, and trace their connection in cause and effect (reflecting); these having various modes of action recognised as memory, association, &c.; and that these various media, powers, and modes of operation may all be improved by use and exercise. (See HUMAN MIND, No. 71.)

Intellectual education properly begins with the first symptoms of consciousness in the infant—the first indications that the senses and internal observing powers, the germs of which exist in the youngest infant, are beginning to operate.

The senses require the earliest attention of the nurse. Sight, hearing, and touch are, in a very short time after birth, in obvious activity; but they require at first to be very delicately treated. Exposure to bright lights, and sudden loud sounds, has produced blindness and deafness for life. Both senses should be brought on gradually. These, as well as touch, should then be judiciously exercised upon their own objects, placed at different and increasing audible and visible distances, till at great distances objects can be seen and slight sounds heard. Objects should also be touched blindfold, and discriminated. Smell and taste are improvable by similar means. It would form an extremely interesting occupation to an intelligent nurse, for many a moment of ennui which she now endures, in her care of an infant, to exercise its senses on their appropriate objects. When nothing is done, or when the child is shut up in a small room with no range of vision, not only is no progress made, but there is great danger of short-sightedness being either induced or aggravated.

Leaving the external senses, and advancing to the internal faculties of the mind—the powers of feeling, observing, and thinking—we may remark that the brain, which is as much the instrument of these powers as the eyes and ears are of their respective external senses, is at birth, and for some time after it, too imperfect and delicate in its substance for active manifestation. The desire of food, and sensibility to bodily pain, alone appear, and are indeed all that are then necessary. But the more delicate the brain, the more delicately ought it to be treated; for an injury to it may produce idiocy or imbecility for life. In the exercise and cultivation of the intellectual organs, it has been found, from experience, that great caution is required. It is here that the brain is most apt to be overworked; and it is here that that premature activity, called *precocity*, appears. Under the head Precocity, Mrs Barwell gives the following emphatic counsel:—'When a child appears to be over-*intelligent*, or too *clever* or *wise* for its age, this is a symptom of unnatural development of the brain; it is a kind of disease which often ends fatally. Avoid, therefore, exercising the child's *ability*; treat it as an animal, with nutritive food, muscular out-door exercise, and plenty of sleep; and do this, and *this only*, for some years.' We allude to the subject of precocity thus early, in treating of intellectual training, because its indications often appear in very early infancy, and erroneous treatment cannot be too soon avoided.

Before two years of age much important intellectual education is going on. It is not the education of books; it is gradual introduction to surrounding objects. How early the eyes are used to gaze at, and the hands stretched out to grasp and become familiar with, everything presented or observed, need not be here insisted on. A judicious nurse will direct this impulse of nature, and much assist this self-education, so that the earliest impressions may be made by such objects as form the materials of existence, and their qualities, never to be effaced in after-life; while the observing faculties will have a healthier growth, by means of an easy and pleasingly-directed exercise. Modern educationists have often complained of a prevalent want, in people of all ages, of what may be called *observativeness*—the power or rather habit of noticing what is before and around us. Multitudes pass through life, of whom it may be said that they have missed four objects in five which came in their way. This could be met in early infancy by taking the proper means of establishing habits of observation. 'Look here;' 'see this;' 'feel that;' 'weigh the other thing;' 'what beautiful colours;' 'smell that flower,' should be the simple and constant lessons of the nurse; and she would find both the intellect and dispositions of the child improved by such exercise. The contrast in after-life between children so trained, and those who never observe anything, would be both striking and instructive. (1)

From Two to Six Years of Age.—Intellectually prepared by the nurse up to the point at which we have arrived—when the child has reached the age of two years, and when, if it can by any means be so arranged, he or she should join an Infant School—the intellectual education will, so to speak, take a more scholastic form. The lessons will be somewhat more systematic, and suited for the simultaneous attention of numbers. But still the caution will never be lost sight of, that, from two to six, the intellectual exercises should be light and attractive, and never long continued at one time; air, exercise, and play, regularly alternating with instruction. The paramount object at that period of life, let it never be forgotten, is *moral* training; to which object companions of the same age, in considerable number, are as essential as light is to the exercise of the eyes, or air to that of the lungs. Benevolence, truth, justice, honesty, attachment, all imply companions. Although at that age the intellectual training is secondary when compared with the moral, yet, without tasking the infant faculties, without giving to the pursuits any character less attractive than regulated play, a great degree of intellectual acquisition and improvement may be realised.

The introduction which the child has received in the nursery to the material world, will form a stage in his progress for the more systematic teaching from two to six years of age. *Objects* will still be the *matériel* of his studies; but they will be so arranged and classed as to conduct him through a complete knowledge of the external features, qualities, and uses—short of their chemical composition—of nearly all the objects with which ordinary life is conversant: simple objects, parts of objects, objects natural and artificial, mineral, vegetable, animal, with their parts, conditions, differences, agreements, manufacture, and abstract qualities, and classification of objects by resemblances and differences. In these exercises several hundred useful ideas may be imparted; all of them made real by the connection of each with some material type.

Simultaneously and incidentally, the words expressing the objects and their qualities, &c. will be given, and, in connection with the object, will never be forgotten. Incidentally, too, the word will be exhibited printed, and so *read* as well as pronounced, and likewise spelled. The letters of the alphabet will be separately taught as objects. This learning of things and words together will be found beneficial as to both. When the senses are explained, which we assume has been done, the exercise will be easy and improving which connects the objects with each sense, or with several at a time; in other words, whether the pupil has seen, heard, touched, smelled, tasted, or weighed the object or its quality. Thus without a task, almost insensibly, and as it were at play, the child in four years will have attained a sum of knowledge of great extent and value, which will form the basis of an enlarged mind in after-life, and prepare for the future acquisitions of science and philosophy. The rule should be rigidly observed, that no object in nature or art should ever be spoken of to a child without an endeavour being made to present it to him either in reality, model, or drawing, and this practice should be continued till the object has become familiar to him.

Between two and six, besides the acquisition of knowledge of objects, much elementary knowledge may be gradually, easily, and almost insensibly, imparted: the simpler geography—arithmetic by means of Wilderspin's ball-frame, or *arithmeticon*—the pence-table—weights and measures—letters, syllables, words, lessons on pictures, of animals, &c.—lessons on maxims moral and prudential—anecdotes and stories with a moral and improving tendency, told elliptically—that is, by words being left out for the children to supply, &c. At this age the vocal powers and musical ear should be exercised, which is both amusing and instructive to the children; many of the lessons may be sung. Much knowledge of common and useful things connected with life and manners may be communicated at this age with an impression that will never be effaced. Lessons, too, connected with exercise in the practice, may be given on the benefits of cleanliness, ventilation, temperance, with all the evil effects of their contraries; while prejudices, fallacies, tyrannies, cruelties, unfairnesses, selfishnesses, bad habits, &c. all of which operate so mischievously on society, may be met by anticipation in lessons and counter-practice, so as to be avoided in after-life. It is plain that the moral and intellectual training must proceed hand in hand. (2)

From Six to Fourteen Years of Age.—In a rightly arranged and complete course of elementary intellectual education, it is presumed that the period from two to six years of age has been spent in an Infant School. The effect which such a preparation has in facilitating the subsequent operations of the teacher is so great, that every effort should be made to give children the advantage of it.

From six to fourteen is the period of the elementary schools. This is the time during which children, besides having their moral education carried on efficiently, are to be introduced to those branches of instruction which are necessary for the business of life—a process which includes within itself the exercise and development of the intellectual faculties, and the formation of habits of intellectual application and taste.

The two great questions are, what is to be taught? and how are we to teach it? Mother tongue—the power of reading it, acquaintance with its grammatical structure, and with the exact meanings of its words, and the power of composing it with fluency and elegance—is certainly entitled to the first attention. There are three modes of teaching it:—*First*, the old practice of instructing children in it by rote, without regarding whether they ever thoroughly comprehend a single syllable of it, or are ultimately able to make the least use of it. *Second*, what is called the Explanatory Method, now uniformly practised in all well-conducted seminaries, whereby it is at least secured that the pupils have some synonyme for every term that comes under their notice, so as to give some reason to believe that they understand it. *Third*, the Exhibitory Method, which adds to other expedients that of showing, in all possible cases, the objects referred to in lessons, or at least presenting drawings of them on a black board or otherwise. Considering how little the young are prepared for the abstract, and how eagerly, under a natural impulse, they grasp at the tangible, we need scarcely remark that the last method appears to us as one of which advantage should be taken as far as possible.

The first step may be a regular series of lessons on the consonants, single and compound, as they occur both at the beginnings and ends of words. In the selection of monosyllabic words for this purpose, care should be taken, for obvious reasons, to avoid such as refer to coarse and mean ideas. The powers of single vowels being thus also taught, it will be proper next to advance to words in which double vowels or digraphs are exemplified; and so on, as in the work here referred to. (3) The lessons for practice should consist of sentences of such a nature as to admit of amusing explanation and illustration by sketches on the black board, and by sensible objects.

1. *Names of things* will perhaps be best explained by showing the object itself, or its picture, and by asking the children to tell what they know *about* the object. Their own simple definitions are very often the best.

2. *Names of qualities* may be taught by requesting children to name objects that *have* the quality. For example, to explain *deep*—'Tell me anything that is *deep?*' The following have been named—'The sea, a well, a coal-pit, a canal.'

3. *Names of actions*, by performing the action named, or describing it by some interesting anecdote, so as to show practically the meaning of the word.

These suggestions may by some be considered trifling and childish, but a proper trial is requested, and the result will show whether children make more real im-

provement by the above simple and obvious expedients, or by being 'crammed' with etymological erudities and dictionary definitions. (4)

Grammar will incidentally accompany the reading, in the form of parsing. By what is called the *incidental method* much advantage is gained: knowledge of an object and its qualities is obtained; its name is pronounced, written down, and read; while its description is read and parsed; all which exercises, instead of impeding, actually aid and facilitate each other. A judicious extension of the incidental method may be made one of the most important means of advancing popular education. Learning to spell orally columns of a book, is a waste of time, and an irksome labour. We spell only when we write; and the power is really not attained by the old school exercise of spelling, but by reading; the words become familiar to the eye as *specific forms*. No one who reads much can remain a bad orthographer; and no one writes much who has not previously read a great deal more.

Simple Lessons in Reading.—The child may now make a step forward in the art of reading and spelling, and be prepared for more methodical intellectual culture. At the same time, in order to *amuse*, and induce reading for *the pleasure it communicates*, the subjects of the lessons should be of that species of narrative which delights the infant mind, bearing, in each case, a reference to the perceptions of the pupil, or tending to encourage in him a love of the beautiful in nature. Instead of the old unprofitable reading and spelling in schools, the improved plan of instruction in English consists of—*First*, Correct reading, dividing and spelling of words; meaning by spelling not the laborious and useless committal to memory of whole columns of spelled words, but, 1, naming letters singly by their powers, grouping them into syllables, and these again into words, so as to *read* a language; 2, putting down letters on paper, in proper number, order, &c. so as to produce a combination expressive of sound, and thus *write* a language. Spelling is acquired by constant practice in reading, writing from dictation, copying pieces from good authors, composing and correcting original essays, and performing systematic grammatical exercises. *Second*, Understanding what is read—proved by searching examination, and illustratively aided by real objects. What is called the elliptical method is here much used, the child supplying the omitted words, and receiving, according to the skill and information of the teacher, much collateral information. Very simple ideas only ought to be called up, and such matters alluded to as may be supposed to interest and encourage the dawning faculties. We cannot too earnestly recommend the practice of illustration by pictures and sensible objects. The *black board* and chalk should be in constant use, and every teacher should qualify himself to draw ready off-hand sketches. The rudest outline done on the spot excites more interest than the finest engraving. The lessons themselves, in detail, are given in the work here referred to. (5) The curiosity of young persons is necessarily first excited by the things which lie most immediately around them, and the circumstances and procedure of familiar life. These are the subjects of their earliest inquiries, and it is extremely desirable that clear, distinct, and correct explanations of them should be invariably given. Most parents of intelligent and well-regulated minds take care that such should be the nature of the answers given to the first inquiries of children; but it is needless to point out, that many persons who have children under their care, either possess not the ability, or have not the necessary leisure, or will not be at the pains, to give correct and satisfactory answers. Lessons should be given which aim strictly at an explanation of *external appearances* in the natural and social world. *Principles* are for subsequent study. The subjects may be such as the following:—Of God and the works of creation; of animated creatures; of mankind; of the country; processes of husbandry; common inanimate objects; and the more familiar arts. (6)

In elementary education, after some progress has been made in the power of reading, the different conditions of a child at about seven, and at from ten to fourteen years of age, suggest the necessity of two series or courses of instruction—one of an elementary or primer-like character, the other more advanced, but both going over nearly the same ground. This is the more necessary, as so many children are taken from school about ten years of age. In the construction of a series of school-books, already more than once quoted, we have proceeded so far upon this arrangement, most of the volumes of the advanced section of the course being foreshadowed in that which may be called the *preliminary*. We observe the same arrangement on the present occasion:—

Preliminary.

Introduction to Geography.—The pupil having, in the Infant School, had some instruction in the simplest elements of geography, may, in his seventh or eighth year, pursue the study more regularly. Lessons may now be given which will suit those whose education allows but a small portion of time for geography—lessons calculated to impress a fair measure of that most useful knowledge even on the future manual labourer. These need not give copious lists of localities, capes, bays, districts, and towns, it being presumed that the learner has maps before him on which he will be exercised. He cannot, moreover, be introduced too early to the GLOBE, for the spherical as well as relative position of its great divisions, with their latitude and longitude. Proportion should also be impressed upon him; this is apt to be confused by maps of different sizes. The relative situation of countries need not be much adverted to, that being best learned on the maps. The chief attention should be devoted to the *characters, physical and political, of the countries*. The plan should be followed of treating, generally, in the first place, of the plants, animals, and races of men, in the different regions; and in the second, of the most important particulars peculiar to each country, which cannot be brought under general heads. With the maps and globe always before the pupil, much useful information may by this method be conveyed. (46–50)

Writing.—This is entirely an art, to be acquired by practice, with the assistance, first of a skilled teacher, to train to the mode of sitting, of holding the pen, &c.; and second, of suitable exemplars of the various kinds of writing (42–45). A free and bold practice on sand tablets or with chalk upon a black board, would probably form a good introduction to the art of caligraphy. It was by such means, under the guidance of his father, that the celebrated Porson acquired that accomplishment of singularly elegant writing, for which he was scarcely less remarkable than for his extraordinary attainments in classical literature.

Introduction to Arithmetic.—The simplest elements of arithmetic are presumed also to have been taught in the Infant School, by means of the instrument called the *Arithmeticon*. In this early school period it may be pursued by means of regular exercises wrought upon slates, according to the rules presented in an appropriate book. An active teacher may also do much for this part of school education by conducting mental exercises, or exercises in which no sensible figures are used. It is found an excellent discipline for giving habits of attention and concentration. (14)

Introduction to English Composition.—The pupil may be at this early period introduced to English composition. We recommend the modern plan of teaching the rules last. Let the pupil successively compose and write down nouns; then their qualities, or adjectives; then the action or change, or verbs. He has been a *composer* from the moment he began as a child to prattle. Let him go on, and he will insensibly infer the essential laws of language, by his own experience and his teacher's hints, more rationally and more thoroughly than from a system of grammatical rules, necessarily dry, irksome, and repulsive. In giving these lessons on composition,

the following suggestions will be attended to:—1. It is suggested that, previously to a pupil's entering on composition, he should spend a few weeks in copying, with great accuracy, short pieces in prose from some good author. This will give the habit of neatness and exactness in the [illegible] points, capitals, &c. and if carefully managed, will [illegible] an excellent preliminary exercise. 2. Each pupil should be provided with a quantity of common paper for the scroll copy, an exercise-book for transcribing, and this text-book. 3. Let the teacher place fifteen or twenty familiar objects on a table or desk before the class, and request the pupils to comply with the direction in the first lesson, by writing on the spot the names of the articles; and so on with the other lessons, in order. 4. When the lists are finished, they should be exchanged, and each pupil should correct the spelling, &c. of his neighbour's work. 5. This done, the papers may be returned to their owners, for the purpose of their reviewing the criticisms; and all should be encouraged to protest against false corrections. 6. The teacher should then pass round the class, deciding disputed points, explaining the ground of each decision, questioning the pupils, and allowing them freely to question him. 7. The scroll-copy thus corrected should be taken home by its owner, neatly transcribed into the exercise-book, which, duly dated, should be handed to the teacher next day. 8. The teacher may then mark the errors in the transcript, asking the pupils to show the cause of each correction. 9. The exercise-book should then be returned to the owner, with a *number* (in the teacher's handwriting) indicating the rank of the exercise. 10. At the end of each lesson, the pupils should be questioned on the parts of speech employed, meaning of words, knowledge gained, &c. 11. The pupils should use *black* ink in writing the exercise, and *red* in correcting. The teacher's criticisms, remarks, and numbers should be in *blue* ink. These distinctions, though apparently trifling, will be found important. 12. Three or four lessons may be given weekly, according to circumstances. Less than half an hour will suffice for writing each exercise, and little more than that time will be required for correction. The lessons will proceed from objects to qualities and actions, each embracing a very wide field of exercise. (8) The derivation of words from other languages, technically ETYMOLOGY, both simple and compound, may at the same time be an incidental exercise. (11)

Introduction to the Sciences.—The pupil has hitherto been conversant with the *external* features of objects, and the ordinary uses to which they are put. At the age of nine or ten he may be gradually introduced to philosophical *principles*—to a connected and systematic view of nature, the most obvious parts of which it is composed, and the laws by which it is governed. The subjects will be—the extent of the material world; the stars, solar system, the earth as a planet, the moon, eclipses, masses of matter—their attractions and motions; the earth—its general superficial features, its structure; the soil, the atmosphere, heat, light, electricity, and magnetism; evaporation, clouds, rain, frost, ice, snow, the winds; elements of matter—their combinations; the vegetable creation; animal creation; man—his general character and history, his bodily nature, his mental nature. (22)

Rudiments of Music.—About this stage of education, the pupil may be introduced to the principles and rules of vocal music. This is invariably a branch of education in several continental countries, and is attracting marked attention in Britain. In the Infant School we have already recommended simple singing by the ear; the pupil may now not only study musical rules, but learn to sing from notes.

Advanced.

Geography.—A year or two after the pupil has mastered the Geographical Primer, he may proceed to study geography in a more enlarged and generally informing manner. (51–53) Taking England as the first of a series of countries, he will study its situation, extent, division, and general detail of localities; after which will come its physical geography, including superficial features, climate, soil, and vegetable productions, minerals, animals, natural curiosities; next, its historical geography, including remarkable events, antiquities; its political geography, including its civil state, revenue, army and navy, and ecclesiastical state; its social geography, including its national character, language, literature, arts and sciences, manufactures and commerce. In thus studying the geography of particular countries, a constant reference to maps is necessary. By having these sufficiently large, and the natural features strongly marked, as in the series here referred to (47–49), a whole class can learn at once.

Arithmetic and *Grammar.*—These branches are now pursued on more comprehensive plans, and with a deeper investigation of principles. In connection with the former (15) stands book-keeping (16); with the latter (10) etymology and composition—all of which will now be thoroughly mastered, as technicalities of the greatest importance for the business of life.

Drawing.—This is an art, of the same character as writing, less imperatively necessary, but yet entitled to more attention than is generally paid to it. Its elements may be acquired by all, and are calculated to be useful in many circumstances throughout life. These may be taught by the use of chalk upon a black board. The objects should be the simplest delineations of common things, beginning with practice in straight and curved lines, and proceeding to a paling, a wall, a gate, a guide-post, a house, a rustic bridge, utensils, tools, and implements, flowers, patterns, and animals. On the black board, the chalk, compasses, and rule may be employed; on the slate, only the hand and eye should be used at this stage of the young pupil's progress. Deeper lines will show foregrounds—lighter, backgrounds; and thus the first notions may be given of aërial perspective. By rendering universal some instruction in drawing of common objects, real talent, where it exists, will never be concealed; while much pleasure will be derived from efforts far short of those of the higher order of genius. (44)

The pupil will in due time advance to the elements of drawing and perspective, and the art of sketching from nature. (45) Terms in the art of perspective should be explained to him, and figures delineated, which are nothing more than the simpler geometrical diagrams. The sector, visual rays, points of sight, all the rules of perspective, should be plainly and intelligibly laid down. Black-lead pencil-drawing, characters of foliage, light and shade, and tinting; styles and modes of treatment in sketching from nature, both landscape and figures, with the rules for arrangement and effect, should all be made plain to and practised by the pupil, the teacher guiding his efforts. We may remark here, and the observation is of general application, that the teacher must keep in mind that intellectual powers are bestowed on different individuals in different degrees; and such differences must be allowed for. It will soon be seen whether the pupil possesses powerfully the drawing or pictorial faculties. If he does not, he should never be pushed beyond the simplest elements of the art. The same is true of other branches of study.

Natural or Mechanical Philosophy.—The pupil, now advancing to his eleventh and twelfth year, may proceed to the elements of mechanical philosophy, by custom, though too extensively, called *natural philosophy* or *physics*; seeing that, under that denomination, chemistry and even natural history have as good a claim to be ranked. It is a question whether this branch of physical science, or chemistry, should be studied first. We think they may, in their elements, proceed together; but if singly, it seems rather more natural to attend to the more visible and tangible properties and powers of matter, unchanged in its substance, than to those that require a change in the constitution of mat-

ter, often its destructive analysis, to ascertain its composition. All should be familiar with the laws of matter and motion—with matter's impenetrability, extension, figure, divisibility, inertia, attraction, cohesion, capillary attraction, chemical attraction, magnetic attraction, gravitation, repulsion, heat, evaporation, contraction, ignition, density, specific gravity, compressibility, elasticity, dilatability; with motion and forces, weight in falling bodies, centre of gravity, pendulum, centrifugal force, projectiles, action and reaction, motion in elastic bodies, reflected motion, composition of motion and of forces. (28)

Mechanics and Machinery.—The pupil, after having attained a competent knowledge of the above particulars, may proceed to study the mechanical powers and their philosophy—the lever, pulley, and inclined plane, which are the primary mechanical powers; while from the lever and inclined plane come the other three, or secondary mechanical powers—the wheel and axle from the lever, and the wedge and the screw from the inclined plane. The combinations of mechanical powers, friction, human labour, horse-power, draught, water-power, and steam-power, and all the science of machinery, will naturally follow. (34)

Hydrostatics, Hydraulics, and *Pneumatics* will next in order engage the pupil's attention; and he should not be suffered to proceed without having mastered, by the test of strict and searching examination, the previous subjects, which form a series.

When he has become familiar with the mechanics of solids, he will proceed to the study of the laws of fluids, including the aëriform fluids. The hydrostatical part embraces pressure of water, levels, specific gravity, fluid support, &c. Under hydraulics—the hydraulic press, aqueducts, fountains, friction between fluids and solids, action of water in rivers, waves, change of temperature, &c.

Under pneumatics are comprised—the atmosphere, laws of air, pressure of air, the air-pump, pressure of air on solids and liquids, on mercury; the barometer, pumps, siphons, steam, latent heat, winds, sea and land breezes, ventilation, diving-bell, buoyant property of aëriform fluids, balloons. (28)

Optics, Acoustics, Astronomy, Electricity, and *Meteorology,* will complete a course of natural philosophy. (28 29 30)

Chemistry.—It will now be time to lay a foundation for the pupil's future progress in chemical science, and at the same time impart to him a practical knowledge of the chemical laws and operations which are at work around him in daily life. (31) Such are respiration, combustion, heat, light, water, poisonous gases; these are all matters upon which comfort, health, and life itself may depend. The teacher should begin with showing experiments, and should be possessed of a museum of substances and chemical agents, with an apparatus.

Animal Physiology.—The important purpose served by including this subject in juvenile education, is the preservation of health, not its restoration when lost; the *prevention* of disease, not its *cure,* with which last the ignorant cannot be trusted. It ought to be impressed as a maxim, that although we ought not to be our own doctors, we need not be our own destroyers. We ourselves can bear testimony to the successful introduction of this study in several schools; and to the interest taken by the pupils of both sexes, from nine to twelve years of age, in the lessons, which are illustrated, as they ought always to be, by diagrams. (32)

Mental Philosophy.—This is a department of science which it is the fashion of our age to overlook. Yet what can be more important than a knowledge of that wonderful power by which we think and act, and which more especially connects us with the things above and beyond this humble and transitory scene! No serviceable manual as yet exists for imparting a knowledge of mind in schools; but an intelligent master has it in his power to do much by oral instruction.

Mathematics.—This important branch of study cannot be omitted in elementary education. In its widest sense, it is that science which treats of measurable quantity, in magnitude and in number. *Geometry* is the branch of mathematics which treats of that species of quantity called magnitude, both theoretically and practically. Theoretical geometry investigates the relations and properties of magnitudes in three dimensions—as lines, surfaces, and solids. Although magnitudes have no *material* existence, they may be represented by diagrams. That branch of geometry which relates to magnitudes described on a plane, is called Plane Geometry. This requires six elementary books—a book on the quadrature and rectification of the circle, a book on geometrical maxima and minima, an exposition of the method of geometrical analysis, and an additional second and fifth book. The basis of the first six books should be the 'Elements of Euclid,' as given in the very correct edition by Simson, with the improved fifth book by Playfair, and the other improvements of the latter geometrician contained in his original edition of Euclid's 'Elements.' The pupil will proceed with the definitions, postulates, and axioms. (16) Solid and spherical geometry and conic sections (18) will next engage the pupil; and finally, the elements of algebra. (17)

Elocution may be the next pursuit of the pupil. In this branch of study the subjects of articulation, inflection, modulation, and the measure of speech will be familiarly explained. (12)

History, &c.—History and biography are important branches of information, of which it is well to acquire the elements at school. The history of the mother country, its literature, and great men, has the most immediate claim upon attention; after which come the histories of the countries to which geographical and political circumstances, or any other cause, have given importance in our estimation. (37-41)

Natural History.—As a study for the two last years of the fourteen, ought to be reserved natural history, which is better understood, and more beneficially acquired after than before the study of the elements of chemistry and mechanical philosophy. The pupil, in this branch, will learn to distinguish the animal, vegetable (34), and mineral kingdoms; the atmosphere and its phenomena (30); the winds, the ocean with its tides and currents; the discoveries of geology (35); the nature of animals (33) and plants (34), &c.

Political Economy.—A pupil who has entered his fourteenth year, with his mind stored with the knowledge and strengthened by the exercise of the education we have described, should be introduced to the elementary principles of political economy. Society suffers in its vital interests from the prevalence of ignorance and prejudice in this great field of speculation and action.

Logic.—The elements of logic appear to us to form the appropriate conclusion to our practical elementary course from six to fourteen. All that precedes it is knowledge, and, as such, chiefly addressed to the *knowing* faculties of the mind. But man has also *reflecting* faculties; and it constitutes the chief end and object of our knowledge to furnish these with materials for their exercise, which is called reasoning. This, the highest operation of mind, is regulated by laws in the nature of things, which right reason both discovers and obeys. These laws systematised constitute the science, practically the art, of logic. The pupil, while he masters its principles, should be well exercised in their application. (See No. 73 of this Series.)

Religion.—The first principles of religion are understood to have been imparted under the circumstances indicated in our section on moral education. In a school course, due provision must be made to carry out this all-important department. Looking only to what the principles of education ask from us on this point, we would direct, first, the continuation of the method formerly described; next, daily Scripture reading; next, a subjection of the individual pupils to the agency of the ordinary means of diffusing religious knowledge and maintaining religious impressions.

Languages.—Though it is a great error to regard the acquirement of one or two ancient languages, and a school study of a few of the books written in them, as constituting a liberal education, unquestionably a liberal education ought to include that acquirement and that study. The commencement of a classical course, as it is called, may be made during the latter part of the elementary period; but it should mai. y be postponed till after fourteen, when the comparative ripeness of the mind enables a pupil to acquire more of this kind of knowledge, and that more effectually, in one year, than in three or four at an earlier stage. The study of the classical languages is a special education, required by those whose occupations are to be of a philosophical or literary character. In an expressly literary education, they would always form a conspicuous element. And the refining effect which the admirable productions of the Grecian and Roman writers is calculated to have upon the minds of all must be at once admitted. The abuse of these languages in education has been solely in their being made the sum and substance of all education, and, though in a less degree, in their being taught at a period of life when it is impossible to experience their softening and improving influence. (CLASSICAL SERIES.)

MECHANISM FOR EDUCATION.

The mechanism for education may be said to be of two kinds—that which is furnished in the family circle, and that which is furnished by public establishments.

The mother is an educator of nature's appointment, and the first. To her falls the duty of securing the sound organisation of the infant, as far as it can be done by obedience to nature's rules before and after his birth. She has the duty of drawing his senses and intellectual faculties into that gentle exercise which gives them vivacity without being attended by danger, and that of establishing the basis of regular and correct moral habits. For all these purposes she is in a position of great influence; for her infant, accustomed to look chiefly and most immediately to her for protection, kindness, and every comfort, is unavoidably disposed to pay to her that veneration on which genuine influence depends. She is, as has been well said, the DEITY of the child, and nothing but a sad misuse of her own feelings can prevent her from being all-powerful over him for the regulation of the whole economy of his being, at least during the first two or three years of his life.

So far as moral education depends, as we have shown, on moral atmosphere, and the influence of immediate example, the importance of home as a part of the mechanism of education must be acknowledged. Before the period of school attendance, home is all in all; thereafter, it still continues to bear a great share in the duty. The formation of moral habits, and the development of religious feelings, will depend much on what is done in these respects in the family circle. Parents may even serve as aids to the business of school, to a degree of which they have in general little conception. First, they may do much in the way of enforcing and providing for that important requisite—regular attendance. Second, they may strengthen the hands of the teacher by paying him a proper respect. Compared with these objects, the mere superintendence of lessons given out to be learned at home, is, though itself important, a trifle. There is a tendency in parents to be over-easy in the admission of excuses for attending school; and they often take away their children for a considerable time, for reasons affecting their own conveniency and pleasure. It is also not uncommon for them to look down upon teachers, and speak of them, and even to them, in no very respectful terms. All these are errors of a fatal character, seeing that they weaken the school mechanism in some of its most important requisites.

A child becomes a fit subject for the education of public establishments at from two to three years of age or thereby. From this age till six, he should, if possible, attend an Infant School.

CHAMBERS'S EDUCATIONAL COURSE.

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7. Moral Class-Book.
8. Introduction to Composition.
9. Introduction to Grammar.
10. Grammar.
11. Etymology.
12. Elocution.
13. History of the English Language and Literature.

Arithmetical and Mathematical.

14. Introduction to Arithmetic.
15. Arithmetic.
Key to Arithmetic.
16. Book-Keeping by Single and Double Entry.
17. Algebra.
Key to Algebra.
18. Elements of Plane Geometry.
Key to Plane Geometry.
19. Solid and Spherical Geometry.
20. Practical Mathematics.
Key to Practical Mathematics.
21. Mathematical Tables.

Scientific.

22. Introduction to the Sciences.
23. Laws of Matter and Motion.
24. Mechanics.
25. Hydrostatics, Hydraulics, and Pneumatics.
26. Optics.
27. Acoustics.
28. Astronomy.
29. Electricity.
30. Meteorology.
31. Chemistry.
32. Animal Physiology.
33. Zoology.
34. Vegetable Physiology.
35. Botany. (*In Preparation.*)
36. Geology.

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37. Ancient History.
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39. History of Rome.
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Classical Series.

WITH INTRODUCTIONS AND NOTES IN ENGLISH.

53. Introduction to Latin Grammar. (*Nearly Ready.*)
54. Latin Grammar.
55. C. Julii Cæsaris Commentarii de Bello Gallico.
56. Q. Curtius Rufus, de Gestis Alexandri Magni.
57. C. Sallustii Crispi Catilina et Jugurtha.
58. P. Virgilii Maronis Carmina.
59. M. Tullii Ciceronis Orationes Selectæ XIII.
Livy—Horace—Ovid, &c. (*In Preparation.*)

The *Infant School*, although a modern invention, is a part of educational mechanism which is now generally approved of throughout Europe, being in vogue not only in Britain, France, Holland, and Germany, but even in Italy. It is, when rightly constituted, only a nursery upon a large scale—a place where infants may be reared in company instead of being kept in solitude—where they may be reared in pure and well-regulated circumstances, instead of being exposed to the contaminations of a public street. It is peculiarly essential for the children of the poorer classes, who are otherwise so liable to become a mere infantine *canaille*; but it might be well for children of every grade to be brought up in Infant Schools, as society or assembling together is essential to the working out of many of the problems of education.

An Infant School should generally be calculated for about 100, or not more than 140 pupils, of both sexes. Two teachers, male and female (if possible, a man and his wife), are required—the one to superintend the boys, and the other the girls. The school should be well ventilated, and fitted up with a long gallery containing six or seven tiers of seats, and divided into two departments for the various sexes, the younger children being disposed in the lowest forms. The walls should be furnished with drawings of natural and other objects; and a black board and arithmetic ball-frame should likewise be provided. A piece of play-ground is so essential, that no establishment without one is entitled to be considered as an Infant School. It should have flower-borders, which the children are trained to respect, and places of convenience, where cleanly and delicate habits are inculcated. A circular swing is required for the amusement and to promote the physical health of the children; and it will be well to have a quantity of wooden prisms, of the form of bricks, with which they may engage in the building of houses, towers, and other structures, according to fancy.

The intellectual education of an Infant School is limited to the learning of little hymns and knowledge rhymes, the study of simple geometrical forms, and of the merest elements of arithmetic, exercises upon narrative passages of Scripture, the properties of objects, the characters of animals, the names of countries and cities, &c. In some, reading and grammar have been introduced, to satisfy prejudiced parents; but these are departures from the right character of the institution. Most of the lessons are metrical, and sung to simple airs. The moral department, confessedly the chief, consists in the learning of good precepts, Scriptural and otherwise, the fostering of kindly and gentle dispositions, and the restraint of angry and malevolent feelings, the formation of conscientious, truthful, polite, and delicate habits. It is remarkable how far a good Infant-School teacher can accomplish these objects, and how quickly any new pupil is brought into harmony with the general spirit of the place.

An Infant-School teacher requires a union of qualifications which is not often attainable. He should possess a gentle and affectionate character, with unlimited patience, yet have that intellectual activity and vivacity which are necessary for sustaining attention in young children. He must both be a well-informed man and capable of making what he knows readily intelligible to those who know nothing; he must both be firm and discreet in management, and possessed of manners of almost infantine playfulness. A knowledge of music, and a good voice, are amongst the qualifications which he requires.

The elementary schools following upon the infant seminaries (where these exist, or, otherwise, being the first schools) are different in different countries, not only in the materials and modes of instruction, but in the extent to which they carry on pupils. In Britain, they are generally in a state considerably inferior to what is found in Holland and Prussia. In a rightly-constituted system, there would be two seminaries between the Infant School and the university—the first, or primary school, being devoted to those branches of instruction in which all should participate; and the second, or secondary school, affording continued and more advanced instruction to those destined for professions and for the more important places in society, and, as such, being preparatory to the university. The parish school and grammar school of a small Scottish burgh may be considered as an arrangement approaching to what is required in this respect.

The primary school is applicable to the ages between six and ten or eleven. In a country under a national system of education, one would be required for every group of population above a thousand in number, as the attendance would then probably be from a hundred to a hundred and fifty. Reading, grammar, arithmetic, the elements of geography, history, and science, and moral training, would form the chief features of the business of a primary school. And to this extent all should be educated. It follows that infant and primary schools ought to be special subjects of state provision and care. Society is expressly interested in seeing all children trained and instructed thus far, that they may become a moral and intelligent population. So strongly is this regarded in Prussia, that education, up to the point in question, is enforced by law. Certainly it is at least well to encourage parents, by all means consistent with the spirit of a free country, to have their children educated to this extent. While the state, then, regulates the education of infant and primary schools, the state should also furnish it gratuitously, or all but gratuitously, thus removing all difficulty which may be felt by indigent individuals, the very class whose children are apt to become most dangerous if left uneducated. It has often been objected to the idea of gratuitous education, that what is obtained for nothing is not valued; but the education furnished by the state (or, as an alternative, by local assessment) would not be really gratuitous. Every parent would know that he contributed to the fund by which the school was supported, and that this was much the same thing as paying fees.

In order to insure a supply of well-qualified teachers, as well as for the sake of uniformity of methods, the infant and primary schools would each require district normal schools. Teaching is an art. It is one of considerable nicety, requiring both natural and acquired gifts of no ordinary kind. Without a due apprenticeship to it, no man can be expected to satisfy the demands of the modern educationist. There is a large amount of detail, both in the methods of procedure and in the material of instruction, which a candidate for this employment must have thoroughly mastered before he can duly teach. There is also an aptness and facility for the duty which nothing but practice can give. For all of these reasons, schools for the training of teachers, or normal schools [so called from *norma* (Latin), a rule], are indispensable. We have not room here to enter fully into the details of a well-constituted normal school of any kind, but may pause for a moment to indicate the important principle, that it is not sufficient for a young man to sit by, observing the procedure of a well-conducted school; he must enter personally into the business, and be accustomed to act as a teacher himself, in order to attain the qualifications necessary to successful tuition.

We have considered the infant and primary schools as comprehending the education required by all the children of a state, and as therefore calling for state support and regulation. For this reason we have indicated a conclusion to the primary-school period somewhat later than what is practically the case in the schools answering more or less to this description. Generally, the primary school period may be said to end at nine years of age, at which time a boy, for example, is considered as fitted to commence a classical course in a higher school. While the material of intellectual education remains generally as it is, this arrangement will be appropriate; but if we consider some branches of general knowledge as necessary for all, we must postpone the conclusion of the primary period to ten or

eleven. At that age the children of the humbler classes would be fitted to commence the active life to which they are usually destined, while others would be equally ready to go forward into advanced schools.

The secondary school—answering to the grammar schools and academies of Britain, the colleges and *pensions* of France, the gymnasia of Switzerland and the German states—is the first school appropriate chiefly to the middle and upper classes. As its benefits are not universal, it should be supported solely by those who take advantage of its instructions, although the state may extend to it protection and regulation. The higher intelligence required of the middle and upper classes, and the special education required for the professions which many of these classes are called to follow, constitute the necessity for secondary schools. They are introductory to a university course for those who are to follow law, medicine, divinity, or any of those other occupations which are now rising into the same rank with the 'professions;' those otherwise destined here obtain that comparatively liberal education which is required in the middle walks of life. The course of instruction proper to a secondary school corresponds with what has been pointed out in the preceding section as the advanced department of intellectual education. It may here be proper to remark that, when we speak of certain classes of the community attending this advanced order of schools, we do not mean that these are to be conducted on exclusive principles. Let their fees be as moderate as possible, and let all who can afford attend. In such circumstances, it would often happen that children of the humbler classes, who showed an aptitude for education, would obtain it, and be thereby enabled to make an advance in life suitable to the faculties with which nature has endowed them.

Religious instruction is presumed, as formerly indicated, to be imparted, throughout the whole period of elementary education, in schools. Here a difficulty as to arrangement unfortunately arises from the various views which are taken on doctrinal points. The teaching of doctrine according to the views of any one denomination, necessarily precludes, from the school where it is done, the children of those who dissent from the views in question. On the other hand, if doctrine be excluded, those who are most eager for the inculcation of particular doctrines or for the maintenance of particular religious institutions, are offended. To obviate the difficulty as far as possible, a particular arrangement has been made in Holland, in the Irish national schools, and some others; Scripture reading is there confined to such parts as include no controverted doctrines, and to a general reference to the Bible on preceptive points, and all else is taught to the pupils, at extra hours, by their particular pastors. It is thus thought possible to inculcate the doctrines of religion as efficiently as by any other plan, while the school is allowed to be a common good to all classes of the community, and a means of bringing up the children of religious parties in harmony together.

INDUSTRIAL EDUCATION.

The mingling of industrial arts with education is an idea of modern times. One of the first examples of it, by which general attention was attracted, originated at Hofwyl in Switzerland, in 1806, under the care of a man of fortune, M. de Fellenberg. Here the object was to teach farming on improved principles, while general education was conducted on an almost incidental plan, at intervals, by the superior of the establishment. Schools of this kind have since been planted in other parts of the continent, and in the United Kingdom. Latterly, industrial education has been extended from agriculture to ordinary handicrafts, and in most instances with gratifying success.

As a specimen of a purely 'agricultural school,' we select that of Templemoyle near Londonderry, which appears to be conducted in an efficient manner. Established in 1827 by the North-West of Ireland Agricultural Society, for the purpose of giving young men 'a plain English education and a knowledge of the principles and practice of agriculture,' it contained at the period of our last edition [1842] sixty-six pupils, for each of whom a small payment was made. The superiors were a teaching farmer and a schoolmaster, beneath whom was a matron to superintend the domestic establishment:—

'At half-past five the pupils rise, arrange their rooms, say their prayers, and, in two divisions, which alternate on different days, are engaged until eight in study or in work; half the pupils are with the farmer, and half under the schoolmaster, except on extraordinary occasions, when the services of all are required for the farm, or the season releases them from their agricultural duties. At eight they breakfast, and are free until nine; work and attend school in alternate divisions, from nine until one. Dine at one, and have recreation until two. From two to six, are at work and in school alternately. From six to seven, sup and have recreation. From seven to nine, prepare the lessons for the next day, have prayers, and retire at nine. On Sundays they attend their respective places of worship, and occupy a part of the remainder of the day in religious reading.

The intellectual instruction consists in spelling, reading, grammar, geography, arithmetic, writing, and book-keeping, with some elementary and practical geometry and trigonometry. The farmer gives lectures also in the evening upon the theory of agriculture. It is intended to introduce [now carried into effect] lectures on botany and agricultural chemistry.

The practice includes all the operations of farming, under the different approved systems; the rearing of cattle, the management of a dairy, and, in general, the incidental as well as the direct occupations of the farmer or agricultural labourer. The head farmer, or agricultural master, is expected to explain the principles of the work in which the pupils are engaged, and to take opportunities for incidental instruction. The operations which he is specially called upon, in the regulations of the committee, to teach, are—ploughing, and the setting of the plough, the use of farming instruments in general, the qualities of stock, and modes of recognising them, the treatment and management of dairy and farming stock, the making and repairing of fences, the rotation of crops, and those best adapted to different varieties of soils, the modes of draining, reclaiming, and improving lands, and the most recent inventions and improvements in agricultural implements. The farmer takes those who are sufficiently advanced in knowledge and age to be benefited thereby, to the fairs or markets, to assist in the sale of the products of the farm and stock.

The pupils are divided, for work, into sections, each of which has its monitor or chief, and consists of eight or ten boys. The head monitor, or superintendent, has the control of them in the absence of the master, and arranges with him the distribution of their time, takes an account of the stock and of the products of the labour, and advises with the master in regard to the farm in such a way as to prepare himself for actual superintendence. This place is occupied by the elder pupils in rotation.

The farm consists of one hundred and thirty-three acres, of which one hundred and twenty-five are arable land. It is worked so as to present examples of the most approved rotation of crops, the fields embraced in the same series of shifts lying adjacent to one another. The whole is drained by underground drains, according to the improved Scottish system, and is well enclosed with different fences as specimens, and trials of the various kinds.'*

Industrial village schools are well exemplified in that of Ealing, about five miles from London, established by a benevolent lady. The principles held in view in establishing this seminary were, that the children should early acquire habits of patient industry; that they should

* Bache's Report on Education in Europe. Philadelphia. 1839.

be acquainted with the value of labour, and know the connection between it and property; that they should have intelligence, skill, and an acquaintance with the objects by which they are surrounded; that the higher sentiments, the social and moral part of their being, should receive a full development. The industrial occupation is gardening, pursued in a piece of ground connected with the school. 'It is divided,' says Mr Bache in the Report already quoted, 'one portion being reserved for the use of the school, another being subdivided into small gardens for the boys. The pupils work in the first under monitors, and receive a compensation in proportion to the useful results of their labour. The second they hire at fixed rates, and dispose of the produce as they please, always receiving, however, the market price for it from the school, if they choose to dispose of it there. The younger children are not allowed to undertake gardens on their own account, but work for others, or for the establishment. Partnerships are sometimes formed among them for the more advantageous cultivation of larger pieces of ground. An account current with each pupil is kept, in which he is charged with the rent of his ground, and the seeds and plants which he has purchased from the stock, and credited with the produce which he has sold to the school.'

In-door occupations are less desirable in alternation with school instruction than these healthy out-of-door labours, but must have the effect of training to steady and persevering habits, not to speak of the actual skill conferred by them. As an example of a school in which such occupations are pursued, we select that of the Royal Military Asylum at Chelsea, where 600 children of non-commissioned officers are reared. Those above eleven are here taught handicrafts, about four hours a day of three days of the week being thus devoted. 'Rather less than a hundred boys,' we quote the 'Report of the National School Society,' 'work as tailors; fifty each day alternately: about the same number are employed in a similar manner as shoemakers, capmakers, and in covering and repairing their old school-books; besides which, there are two sets or companies of knitters and of shirt-makers, and others who are engaged as porters, gardeners, in kitchen-work, &c. Everything is done by those who work at the trades except the cutting-out. This branch, requiring more experience, is managed by the old regimental shoemakers, tailors, &c. who, with aged sergeants and corporals, and their wives, manage the concerns of the institution. The system of monitors and teachers to overlook the other boys at work is generally adopted; while, in addition to the various branches of industry mentioned, the school furnishes a company of drummers and fifers, and an excellent band of music; the players necessarily devoting a considerable part of their time to the practice of their instruments.' Though there are some defects, the asylum is allowed to be 'an evidence that a greater degree of progress may be made in reading, writing, and arithmetic, and in other branches of learning, than is attained in the great majority of schools, and yet that the boys may be taught music, gymnastic exercises, and various useful trades; thus improving their health, increasing their means of enjoyment, and promoting their future interests, much more effectually than by the prevailing methods.'*

Industrial education is practised with marked success in various institutions for the reform of young criminals, as in Parkhurst Penitentiary, Isle of Wight, and the Warwick County Asylum; in several for the refuge of destitute persons, as in that at Hoxton, and the Guernsey Hospital; in various schools for orphan and pauper children under the New Poor-Law Act, of which that at Norwood is a most interesting example; and in those charitable institutions commonly known as Ragged Schools (see p. 183, No. 62), which have been recently opened in many of our populous cities. It is not as an *improvement*, which may or may not be adopted, that industrial education is here to be advocated: it is called for as something *absolutely necessary*, to counteract an inherent tendency of all asylums for the maintenance and education of children to become monastic institutions. The children are kept apart from external nature, from human society, and from many or most of the common operations of life. They come out as helpless nearly as they went in. Industrial education presents itself as almost the only conceivable means of fitting such children for entering the world in anything like the same condition as other children. It is not essential that any one child be made a proficient in any one art; the great end is to make them generally acquainted with the arts of life, and to prepare them by habits of industry for earning their own bread when they grow up. From the attention which the Poor-Law Commissioners are giving to the subject, we have no doubt that in a short time we shall see the whole of the forty-five thousand orphan and pauper children of England educated in this wholesome manner. In the late reports of the commissioners there are some excellent hints thrown out. Different arrangements are recommended for different districts. It is suggested, that in an agricultural district there ought to be a large garden which the children should be taught to cultivate, in order to become acquainted with those duties which they will probably be called to perform when they are sent out into the world. They should also be taught to erect sheds or outhouses, to make wheelbarrows and other simple utensils, and to fashion desks and forms for the school. Thus, as farm-servants, they will be able to execute a number of little jobs in carpentry which would otherwise require the interference of the proper tradesman. To enable them to contribute to their own personal comfort and that of their household, without an expenditure of their earnings, they should be taught to make and mend their own clothes and shoes, to plait straw-hats, to make straw mattresses, and whitewash walls. In a manufacturing district the employments should bear a similar relation to the trades of the neighbourhood; and in or near a seaport, the arts connected with maritime life should be taught. Such, in brief, are the views of the commissioners respecting the boys: they recommend that the girls should be trained to the household duties of cooking, cleaning, and washing clothes, sewing and knitting, by having to perform those duties as far as required in the workhouse. It is worthy of remark, that in the Marylebone charity for girls, this plan has been for many years acted upon with excellent results. There the girls are accustomed to make their own beds, to clean their own knives, forks, and shoes, and to be scrupulously clean in their dress. 'Their chief employment' ('Journal of Education,' i. 287) 'is needle-work; but they are employed in rotation to scour the school-rooms, the play-rooms, and the washing-rooms, the tables, forms, and stairs, as well as to prepare and remove the meals of the rest of the scholars, and to wait upon the domestic superintendent and officers.'

The reporter of these circumstances adds, and we fully concur in his sentiments:—'The value of charities of this description is too obvious to require particular comment. By establishing *good habits*, they doubtless accomplish more than can ever be effected by mere precept; and they not only tend to make useful servants, but provident, neat, and intelligent wives and mothers. If it were possible to engraft some part of such a system on the national and other schools, these advantages would become generally diffused, and the consequence would be a great increase in the comfort of the houses of the poor, and an accompanying contentment, productive of the best results on the character, among young married men of the working-classes, whom the extravagance or mismanagement of untidy and ignorant partners often drives to alehouses, and other resorts of idleness and dissipation.'

* Some Account of the Royal Military Asylum, Chelsea. Second Publication of the Central Society of Education. P. 190.

ENGLISH GRAMMAR.

GRAMMAR (from the Greek word *gramma*, a letter) is, in its broadest sense, that branch of knowledge which refers to the component parts of language.

The purpose of language is to express our ideas. Similar classes of ideas necessarily arise in the minds of every portion of the human family; for the mind is everywhere the same, in kind if not in degree, and the circumstances and desires of mankind are everywhere less or more alike. To express these classes of ideas, men, in all countries and in all stages of society, use corresponding classes of words, although the words may themselves be different. For example, men everywhere see tangible objects around them. To these they apply distinct *names* or *appellations*, which form, it may be said, one class of words—NOUNS. They see things perform *acts*; as, for instance, they see cattle *browse* and kids *dance*. Thus arises another class of words—VERBS. They see *white* cattle and *black* cattle; hence ADJECTIVES. These and other kinds of words, or, to use the common phrase, *parts of speech*, are found equally in the language of the North American Indian and in the refined discourse of the European philosopher. To exhibit the nature and power of words, taken singly and in combination, viewed as a vehicle of thought or a medium of communication, is the first and highest object of the science of grammar.

In the speech of every nation there are also many peculiarities, both in the formation of words to express varieties of sense, and in the way in which words are arranged, these being partly the result of intellectual peculiarities of the people, and partly the effect of accident. Grammar also takes cognisance of such peculiarities. Hence there is not only universal grammar, which relates to whatever is common to the structure of all language, but likewise a grammar for each particular tongue; as, for instance, the Greek grammar, the Latin grammar, the French and the English grammars. Our present business is with English grammar, or to set forth, as well as we can, within small compass, the structure and the usages of the English language.

There are four parts in English, as in other grammars, *Orthography*, *Etymology*, *Syntax*, and *Prosody*.

ORTHOGRAPHY, from the Greek words *orthos*, right, and *graphé*, a writing, is that part of grammar which teaches the nature and powers of letters, and the proper method of spelling words.

PROSODY, from the Greek word *prosodia*, the accent of a word, treats of the pronunciation of words, and of the laws of rhythm or versification.

On both these departments we mean to say nothing, principally because, as we apprehend, they can only be effectually taught by the living voice; besides, as far as relates to Orthography, so few general rules have been ascertained, that they afford little help to the young or inexperienced student. Practice alone can give facility and correctness in spelling. With regard to Prosody, we may further remark, that it relates to a mere luxury of language; because, to the effectual communication of thought, metrical arrangement of language is by no means necessary, and in an elementary work on grammar, it may, without impropriety, be omitted.

This leaves us Etymology and Syntax, which undeniably constitute the chief parts of grammar; and of these we shall treat as fully as our limits permit.

In ETYMOLOGY we shall be guided by this principle, which we hold to be established, that every word has of itself a distinct office to perform; and we shall endeavour to exhibit clearly the force and significance of words taken singly.

In SYNTAX we shall not attempt to lay down *rules*, as they are called, for every mode of expression, but rather to exhibit a few of the leading principles of our language, the complete understanding of which will supersede the necessity of minute observations on our part, as it will enable the student to make them for himself. We cannot approve of the exhaustive system of teaching Syntax—framing a rule for every peculiarity that the language contains; much better is it to conduct the student at once to the *principles*, which are, as it were, the fountain-heads of *rules*. In the one way, we should but exhibit to him everything *by our torchlight*; but, in the other, *we kindle his own*, and having pointed out the road in which he is to travel, leave him to himself. When the student is familiar with the principles, it may be desirable to exercise himself on minute details, and a school grammar (see list of school books in the preceding number on EDUCATION) should provide exercises on the minutest peculiarities of the language.

ETYMOLOGY.

ETYMOLOGY, from the two Greek words, *etymon*, the root of a word, and *logos*, a discourse, is that part of grammar which treats of the various classes into which words are arranged, of the different modifications they undergo to express difference of meaning, and of their origin and history.

I. CLASSIFICATION.

Words are the symbols of ideas, and they are classified and named, not from their form, but from the nature of the idea which they represent or for which they stand. The class of any particular word is only to be ascertained by observing the office which it performs. What it *does*, alone indicates what it *is*.

It would be quite impossible to say, previous to actual inspection, how many sorts of words, or, as they are generally called, *parts of speech*, exist in any language; but upon examination, it is ascertained that all words used in the English language may be arranged under eight heads or classes.

These eight parts of speech are—Noun, Adjective, Pronoun, Verb, Adverb, Preposition, Conjunction, and Interjection.

A definition of each of these classes of words ought to point out the characteristic or specific idea by which it is distinguished from all the others; and every individual word, brought under any of the eight heads, must agree with the definition, *if it is adequate*—that is, neither too extensive nor too limited.

The Noun.

A NOUN, from the Latin word *nomen*, a name, is the name of any person, place, thing, quality, or principle; or, more generally, it is the name of whatever can be an object of contemplation or subject of discourse.

The characteristic of the noun is this: it gives of itself a distinct idea or object of thought; thus of the words, *to*, *pen*, *just*, *alas! he*, *terrify*, and *ship*, the only ones that present a picture to the 'mind's eye' are *pen* and *ship*. These, therefore, we call *nouns*; but the others do not belong to this class.

It should be carefully observed that every proposition, or sentence that asserts anything, must contain at least a noun and a verb—the noun to express the thing spoken about, and the verb to indicate what is affirmed concerning it.

Grammarians usually divide nouns into two great classes—*Proper* and *Common*.

Proper Nouns are such as are applied to individual persons or things only; such as, *Victoria*, *Britain*, *Edinburgh*, *Pyrenees*, *Jupiter*.

Common Nouns are applicable to whole classes of persons or objects; as, *queen*, *island*, *city*. Common Nouns are by some divided into three sub-classes, called *Abstract*, *Collective*, and *Verbal*; by which arrangement the class of Common Nouns, in the limited acceptation of the term, includes only the names of things obvious to some of the five senses.

An Abstract Noun is the name of a quality thought of apart from all consideration of the substance in which the quality resides. The term bears reference to an act of the mind, called *abstraction*, by which we fix our attention on one property of an object, leaving the others out of view. Snow, chalk, and writing-paper are white, and from this quality are oppressive to the eyes. Abstracting the quality from the substance, we say, 'Whiteness is oppressive to the eyes.' *Whiteness* thus becomes an abstract noun.* An abstract noun may also be a name indicating the want of a quality, as *unworthiness*. Comprehensively, abstract nouns are the names of *immaterial existences*, *acts*, or *states*.

Collective Nouns are those which, though singular in form, may suggest the idea of plurality. They are such as, *army*, *clergy*, *crowd*, *class*.

The imperfect participle of a verb (which will be treated of afterwards), when used as the *name* of an action, is called a Verbal Noun. For example, in the sentence, 'The eye is not satisfied with seeing, nor the ear filled with hearing,' the words *seeing* and *hearing* are termed Verbal Nouns.

The Adjective.

An Adjective is a word that qualifies a noun—that is, marks it out from other things that bear the same name.

The characteristic of the adjective is, that it limits the application of the noun: thus the term *island* is applicable to every portion of land surrounded by water; but if the adjective *fertile* be affixed to it, all islands not distinguished by the property of fertility are excluded from our consideration.

This part of speech seems to have received its name from an accidental circumstance, and not from anything essential to its nature. In the Latin language it was usual to place the word modifying the noun after it, thus *tabula longa*, while we prefix it, and say *a long table*; the Latin grammarians, therefore, called this class of words *adjectives*, from *ad*, to, and *jectus*, thrown, and we retain the term, although our modifying word goes first. If the student has learned to recognise the *noun*, he will feel no difficulty in knowing the *adjective*, because its office is to point out some peculiarity or quality which distinguishes the noun.

'Nouns adjective,' says Adam Smith, 'are the words which express quality considered as qualifying, or, as the schoolmen say, in concrete with some particular subject. Thus the word *green* expresses a certain quality considered as qualifying, or as in concrete with the particular subject to which it is applied. Words of this kind, it is evident, may serve to distinguish particular objects from others comprehended under the same general appellation. The words *green tree*, for example, might serve to distinguish a particular tree from others that were withered or blasted.'

Adjectives are generally divided into two great classes—Attributive and Numeral, or those which denote quality and those which refer to number.

The words *a* or *an* (two different forms of the same word) and *the*, are reckoned by some grammarians a separate part of speech, and receive the common name of *Article*—*a* or *an* being called the *indefinite*, and *the*, the *definite* article; but as they in all respects come under the definition of the adjective here given, it is unnecessary as well as improper to rank them as a class by themselves.

In signification, *a* or *an* is equivalent to the numeral adjective *one*, and *the* to the demonstrative adjective *that*; and the only difference between them is, that *a*, *an*, and *the*, convey the idea less emphatically than *one* and *that*. Whoever reads Dr Crombie's remarks on the 'Article' must be convinced of the absurdity of reckoning it a distinct part of speech.

Various other words, generally arranged under the head of *Pronoun*, seem more properly to belong to the adjective. For instance, the eight words, *my*, *thy*, *his*, *her*, *its*, *our*, *your*, *their*, correspond exactly in office with the definition of the adjective; but as they are derived from, and answer to, the *personal pronouns*, they may be called *pronominal adjectives* with more propriety than *possessive pronouns*. If they ever stand alone, they do not exactly supply the place of a noun, but merely have it understood, and so, as will presently appear, do not come under the definition of *pronoun*. In like manner, the words *this* and *that*, with their plurals *these* and *those*, by many called *demonstrative pronouns*; as also the four words *each*, *every*, *either*, and *neither*, named *distributive pronouns*—must in strict propriety be considered as adjectives, inasmuch as they both precede and designate nouns, but never supply their place.

The Pronoun.

A Pronoun, as its composition indicates, is a word that supplies the place of a noun.

Pronouns may be divided into three classes—*Personal*, *Relative*, and *Interrogative*.

The Personal Pronouns are three in number—namely, *I*, *thou*; and *he*, *she*, or *it*.

I is used when the person speaking refers to himself; *thou*, when he refers to the person addressed; and *he*, *she*, or *it*, when he speaks of some other person or thing.

In Mr Mill's 'Analysis of the Human Mind,' a work equally interesting to the grammarian and the philosopher, we find the following account of the Personal Pronouns, and we confidently recommend it to the attention of our readers:—'In all speech there is a *speaker*; there is some *person spoken to*; and there is some *person* or *thing spoken of*. These objects constitute three classes, marks of which are perpetually required. Any artifice, therefore, to abridge the use of marks of such frequent recurrence, was highly to be desired. One expedient offered itself obviously, as likely to prove of the highest utility. *Speakers* constituted one class, with numerous names; *persons spoken to*, a second class; *persons* and *things spoken of*, a third. A *generical* name might be invented for each class—a name which would include all of a class, and which singly might be used as the substitute of many. For this end were the personal pronouns invented, and such is their character and office. "I" is the generical mark which includes all marks of the class *speakers*; "thou" is a generical mark which includes all marks of the class *persons spoken to*; "he," "she," "it," are marks which include all marks of the class *persons* or *things spoken of*.'

All pronouns refer to some noun, which, as it generally goes before, gets the name of *antecedent*; but as it may come after, *correlative* would appear a better term. In the case of one class of pronouns, the reference is so obvious and immediate, that they have been called Relative, by way of distinction. These are, *who*, *which*, *that*, and *as*. *Who* is used when the reference is to a person; *which*, when it is to a thing; *that* and *as* refer either to persons or to things.

The Interrogative Pronouns, so called because they are used to ask questions, are *who*, *which*, *what*, and *whether*. When *what* is not used to ask a question, it gets the name of Compound Relative Pronoun, as it includes in itself the ideas of both correlative and relative; thus, 'Give me *what* is in your hand' is equivalent to 'Give me *the thing which* is in your hand.'

* Though we thus distinguish one class of nouns—those, namely, which come from adjectives or are closely connected with them—by the title *abstract*, we are far from wishing it to be inferred that *common nouns* are not apprehended by the same faculty. On the contrary, metaphysical propriety compels us to admit that such is the case; and if any of our readers feel an interest in the question, we request him, before condemning our opinion, to peruse the third chapter of the third book of Locke's 'Essay Concerning Human Understanding,' and also Adam Smith's 'Dissertation on the Formation of Languages.'

The inseparable word *self*, with its plural *selves*, is called the Reciprocal Pronoun, and denotes that the object and agent of the verb are the same.

Self is added to personal pronouns for the same purpose that *own* is affixed to pronominal adjectives; that is, to express emphasis or opposition. Thus, 'I did it with my own hand;' that is, without the assistance of any other person: 'He did it all *himself*;' that is, without any help from another.

The Verb.

A Verb is a word that *affirms* something of a noun.

The characteristic of the verb is affirmation; it may indeed, in common with the adjective, denote a *quality*; but this is accidental, and not essential to its nature. The *attribute* and the *assertion* are often conjoined in one word, as in the sentence, 'The man *rejoices*;' but they may be separated, and then an adjective will denote the attribute and a verb will indicate the assertion; thus, 'The man *is joyful*.' It is but fair to add, that this doctrine of the verb is not universally received; although, after weighing the adverse arguments of Horne Tooke and Mr Mill, we are inclined to consider it well-founded.

On attending carefully to the nature of the idea presented by verbs, we find that, while they all *assert*, they differ in this respect, that some of them express a sort of action which affects or operates upon some person or thing different from the agent, and that others either denote no action at all, or else a sort of action which is limited to the actor. The first class is called Transitive, and the second Intransitive Verbs. If the student consider with attention the state of his own mind when he repeats, with intelligence, the sentences, 'James *strikes* the table,' and 'James *walks*,' he will have no difficulty in discerning the distinction that exists between a Transitive and an Intransitive Verb.

We have already stated, but the importance of the remark will justify its repetition, that as the noun denotes the thing spoken about, so the verb indicates what we affirm concerning it. Without affirmation there could be no communication of sentiment; hence the class of words by which affirmation is made has been dignified by the appellation of verb, or *the word*. 'Verbs,' remarks Adam Smith, 'must necessarily have been coeval with the very first attempts towards the formation of language. No affirmation can be expressed without the assistance of some verb. We never speak but in order to express our opinion that something either is or is not. But the word denoting this event, or this matter of fact, which is the subject of our affirmation, must always be a verb.'

The Adverb.

An Adverb is a word that qualifies a verb, adjective, or another adverb.

As a *description* of a fact in grammar, this is unobjectionable; but it cannot be received as a *definition*, since the word defined is made use of in the definition. Its application may be thus explained. If we wish to modify the noun or *subject* of a sentence, we must use an adjective; but if the *predicate* is to be modified, or any additional modification to be put on a word already qualifying it, the word then used must be an adverb: thus, in the sentence, 'The sun shines,' we have a simple subject, 'sun,' and a simple predicate, 'shines.' If we wish to express any quality of the subject, we must use an adjective; and if the predicate is to be modified, we must bring in an adverb: thus, 'The *bounteous* sun shines,' and 'The sun shines *equally* on all.'

Adverbs may be divided into four great classes:—

1. Adverbs of *Manner*; as, well, ill, justly, wisely.
2. Adverbs of *Time*; as, now, then, soon, when.
3. Adverbs of *Place*; as, here, hence, there, where.
4. Adverbs of *Quantity*; as, much, considerably.

The adverb, it may be observed, is an abbreviated mode of expression, and the idea could in all cases be conveyed by the use of two or more words. They have a close affinity to adjectives, not only in English, but in most other tongues. Ruddiman justly says, 'That adverbs seem originally to have been contrived to express compendiously in one word what must otherwise have required two or more.' The truth of this doctrine will appear by an inspection of the following table of Adverbs of Place:—

	In.	*To.*	*From.*
This place,	Here	Hither	Hence
That place,	There	Thither	Thence
What place,	Where	Whither	Whence.

The Preposition.

A Preposition is a word that connects two words together, in such a manner as to indicate the relation which the things or ideas signified by them bear to each other.

This part of speech, like the adjective, which it resembles in other respects, has received its name from an accidental circumstance. It generally goes immediately *before* the object related to the other thing named; but the essence of the preposition, it should be carefully observed, is to signify *relative position*.

We subjoin a list of the prepositions in most common use, and we recommend the student to exercise himself in putting them all, one after the other, into sentences. In this way he will learn to apprehend their real significancy; and instead of calling a word a preposition, because it is so named in a compendium of grammar, he will recognise it from its function. Doubtless, by committing the list to memory, a practice as common as it is mischievous, he might soon be able to parse; but his knowledge would be mere deception, and he himself would be but 'as sounding brass and a tinkling cymbal.'

LIST OF PREPOSITIONS.

Above	Between	In	Till
About	Betwixt	Into	Until
After	Beyond	Near	To
Against	Before	Nigh	Unto
Among	Behind	Of	Toward
Amongst	Beneath	Off	Towards
Amid	Below	Over	Under
Amidst	Beside	On	Underneath
Around	By	Upon	Up
Round	Down	Since	With
At	For	Through	Within
	From	Throughout	Without.

The following remarks on this part of speech by Adam Smith, and his scarcely less illustrious disciple, Mr Mill, will amply repay an attentive examination:—'Prepositions are the words which express relation considered in concrete with the correlative object. Thus, the prepositions *of*, *to*, *for*, *with*, *by*, *above*, *below*, &c. denote some relation subsisting between the objects expressed by the words between which the prepositions are placed; and they denote that this relation is considered in concrete with the correlative object. Words of this kind serve to distinguish particular objects from others of the same species, when those particular objects cannot be so properly marked out by any peculiar qualities of their own. When we say "The green tree of the meadow," for example, we distinguish a particular tree, not only by the quality which belongs to it, but by the relation which it stands in to another object.' And again, 'Every preposition denotes some relation considered in concrete with the correlative object. The preposition *above*, for example, denotes the relation of superiority—not in abstract, as it is expressed by the word *superiority*, but in concrete with some correlative object. In this phrase, for example, "The tree above the cave," the word *above* expresses a certain relation between the *tree* and the *cave*, and it expresses this relation in concrete with the correlative object, *the cave*. A preposition always requires, in order to complete the sense, some other word to come after it, as may be observed in this particular instance.'

To the same purpose Mill says—'It is easy to see in what manner prepositions are employed to abridge the process of discourse. They render us the same service which, we have seen, is rendered by adjectives, in afford-

ing the means of uniting minor clauses, taken out of larger, with a great economy of names. * * * Prepositions always stand before some word of the class called by grammarians nouns substantive. And these nouns substantive they connect with other nouns substantive, with adjectives, or with verbs.'

The Conjunction.

A CONJUNCTION, as its name imports, is a word used to join words and propositions together.

Conjunctions are of two sorts, *Copulative* and *Disjunctive*. The Copulative not only join the *words*, but indicate that the *things* are to be united; while it is the office of the Disjunctive to unite the words, but keep separate the things. The youngest child cannot fail to perceive the difference between these two sentences: 'Will you have an apple *and* an orange?' and 'Will you have an apple *or* an orange?' In the first case, he is to get both things—we therefore use a copulative conjunction: in the second, he is to have one only—we therefore use a disjunctive conjunction.

In one respect the preposition and conjunction agree—they both connect words; but each class does something not done by the other. The preposition indicates the nature of the connection, which the conjunction does not; and on the other hand, the conjunction can connect not merely single words, but clauses or sentences. If I say, 'Give me a knife *and* the book,' you may present the objects named separately or together—the knife being *under* the book, *in* the book, or *on* it, and in each case my request will have been complied with; but if I say, 'Give me a knife *in* the book,' the *relative position* of the objects is fixed, and there is only one way of complying with my demand.

We have asserted that the conjunction couples individual words as well as propositions; but as in this we go against authorities so respectable as Ruddiman, Harris, and Mill, we must take some pains to make good our position. Ruddiman says, 'A conjunction is an indeclinable word, that joins sentences together, and thereby shows their dependence upon one another;' and in a note to his rule of syntax—'Conjunctions couple like cases and moods'—he tells us, that 'the reason of this construction is, because the words so coupled depend all upon the same word, which is expressed to one of them, and understood to the other.' To much the same purpose Mr Mill says—'The conjunctions are distinguished from the prepositions by connecting predications, while the prepositions connect only words. There are seeming exceptions, however, to this description, the nature of which ought to be understood. They are all of one kind; they all belong to those cases of predication in which either the subject or predicate consists of enumerated particulars, and in which the conjunction is employed to mark the enumeration. Thus we say, "Four and four, and two, are ten." Here the subject of the predication consists of three enumerated particulars, and the conjunction *seems* to connect words and not predications.' We do not think that Mr Mill's argument is conclusive. There is no *seeming* about the matter. We wish it, however, to be distinctly understood that we do not charge his doctrine with being altogether erroneous; it is only not complete. It is right, so far as it goes; what we maintain is, that it is too limited.

Ruddiman is correct in maintaining that in the example, 'Honour thy father and thy mother,' the word 'honour' is again understood before mother; but this will not do in every case. The sentence, 'Charles and John rode to town,' may certainly be resolved into two clauses, 'Charles rode to town,' and 'John rode to town.' But can the sentence, 'Charles and John carried fifty pounds,' be resolved into the two, 'Charles carried fifty pounds,' and 'John carried fifty pounds?' Obviously not. The conjunction *and*, in that case, connects the two words 'Charles' and 'John,' and shows that conjointly they are the *subject* of the *predicate* 'carried.' In like manner, in the sentence, 'The man of piety and virtue secures the favour of God,' it is not implied that 'the man of piety' secures the favour of God, and that 'the man of virtue' secures the same; but that the man uniting the two qualities, the *marks* of which are united by the conjunction *and*, secures it. Mr Mill himself, indeed, would appear not to have felt quite satisfied as to the conclusiveness of the mode of reasoning which we have been animadverting on, for he immediately shifts his ground, and argues that, because in such a sentence as, 'His bag was full of hares, and pheasants, and partridges,' we may substitute the preposition *with*, and read, 'His bag was full of hares, with pheasants, with partridges,' the word *and* is properly to be considered a preposition. To this extraordinary specimen of reasoning it is sufficient to say, that by a similar process we might conclude, to use a homely illustration brought forward by Dugald Stewart on a like occasion, that because people can 'supply the want of forks by their fingers, that therefore a finger and a fork are the same thing.' On the whole, we consider that nothing can well be clearer than that these great grammarians have taken up a wrong position; but perhaps we have said as much already as the importance of the subject warrants.

The Interjection.

An INTERJECTION is a word used to express any sudden emotion or excitement of mind.

Pure interjections are mere instinctive emissions of the voice, few in number, and unimportant in character; and, as to other parts of speech used *interjectively*, the expression is, we apprehend, elliptical; but this circumstance cannot properly change the nature and character of a word. Horne Tooke considers that 'interjections have no more claim to be called parts of speech than the neighing of a horse or the lowing of a cow; but as there are words in the language which express mental emotion, and nothing else, we must have a name for them, and it would be difficult to find a better than the one in universal use.

PARSING.

The student should now be able to analyse, or *parse*, as it is generally called by English grammarians, any sentence submitted to him. Various artificial rules have been devised to enable one to know what part of speech any word belongs to; but these we mean not to mention, being fully persuaded that such *helps* are altogether 'from the purpose' of grammar, inasmuch as they render thought first unnecessary, and then impossible. No person can parse a sentence which he does not understand, and when he does so understand it, he can have no difficulty in referring each individual word to the class to which it belongs. All he has to do is to compare the idea suggested in his mind by the word to be parsed with the definitions of the various classes with which he must be familiar; and by this mental effort it will soon be ascertained to what class the word belongs. The idea suggested by any word, and the characteristic idea of a class, being brought before the mind at the same time, their identity or difference must be at once apparent. But not to dwell in general reasoning more, we shall present the *analysis* of a short sentence by way of example:—

'A man that is young in years may be old in hours, if he has lost no time; but that happeneth rarely.'—*Bacon's Essays.*

A is an adjective, because it limits the signification of the noun *man*.

Man is a noun, because it is the name of a class of beings.

That is a relative pronoun; its correlative is *man*.

Is is a verb, because it asserts something (existence).

Young is an adjective, qualifying the noun *man* understood. Every adjective must have a noun understood if not expressed.

In is a preposition, inasmuch as it points out the *relation* that 'years' has to 'young man.'*

* It must be confessed that it is not in all cases easy for the mind to apprehend the nature of the relation pointed out by a preposition. The student will do well to familiarise his mind with *physical relations* in the first place, and moral will after-

Years is a noun, being the name of a portion of time.

May is a verb, asserting something (power) of the noun *man*.

Be is a verb, asserting or denoting existence.

Old is an adjective, qualifying the noun *man* understood.

In is a preposition, as above.

Hours is a noun, being the name of a division of time.

If is a conjunction, connecting the clauses, 'A man that is young in years may be old in hours,' to the following clause, 'he has lost no time.' As *if* in such cases points out the condition on which the assertion going before is to be received, it is called by many grammarians a conditional conjunction.

He is a personal pronoun, standing instead of the noun *man*.

Has is a verb, asserting something (possession).

Lost is a verb indicating an act. On the nature of this part of the verb we shall have more to say afterwards.

No is an adjective, qualifying the noun *time*.

But is a conjunction. It connects the two clauses, and at the same time indicates, or, to adopt the apt expression of which Mr Mill frequently makes use, *connotes* that the clause coming after it is in opposition to the one going before, and therefore it is called a disjunctive conjunction.

That is a demonstrative adjective, qualifying the noun *thing* understood.

Happeneth is a verb, asserting something of its subject, 'that thing.'

Rarely is an adverb of time, modifying the verb *happeneth*.

As an additional exercise in *parsing*, we shall transcribe a stanza from Campbell's beautiful ode, 'Farewell to Love,' containing, according to our view, ten of each of the three classes, nouns, adjectives, and verbs; five of the two, pronouns and prepositions; two conjunctions, and three adverbs. The student is requested to make a careful analysis for himself, and see how far our enumeration be consistent with his own:—

'Hail! welcome tide of life, when no tumultuous billows roll;
How wondrous to myself appears this halcyon calm of soul!
The wearied bird blown o'er the deep would sooner quit its shore,
Than I would cross the gulf again that time has brought me o'er.'

To the subject of parsing we shall return before we quit Etymology; but for the present we wish to direct the attention of the reader to the various modifications put on words to express a difference of meaning.

II. INFLECTION.

Any change made upon the termination of a word is called its *accident* or *inflection*; thus, the words, *boy's*, *harder*, *its*, *loved*, and *sooner*, are said to be inflected forms, or simply inflections of the words *boy*, *hard*, *it*, *love*, and *soon*. Of the eight parts of speech, five only—the noun, adjective, pronoun, verb, and adverb—are declinable—that is, capable of being inflected; while the remaining three—preposition, conjunction, and interjection—are indeclinable—that is, cannot be varied in such a way as to express any modification in meaning.

Inflection of Nouns.

The noun is varied in three ways—by Number, Gender, and Case.

NUMBER shows whether one or more than one thing is meant by the noun.

There are two Numbers, the Singular and the Plural. The singular expresses one of a class; as river, horse. The plural denotes more than one; as rivers, horses. The plural is generally formed from the singular, by adding the letter *s*; thus, table, tables; book, books.

Nouns ending in any of the five following terminations, *s*, *sh*, *ch* (when pronounced soft), *x*, and *o* (impure—that is, preceded by a consonant), form their plural by adding *es* to the singular; thus, brush, brush*es*; church, church*es*; box, box*es*; hero, hero*es*.

When *ch* is pronounced hard, and when *o* is preceded by a vowel, the plural is formed by adding *s*; thus, monarch, monarch*s*; folio, folio*s*.

words become more easily recognizable. In the following sentence it is at once perceived what relation the first *in* expresses, but much more difficult to get the distinct idea meant to be conveyed by the second:—'Diogenes sat *in* a tub, but he was generally *in* good-humour.'

When a noun ending in *y* is to be formed into the plural, *s* is added if the *y* is preceded by a vowel; but if a consonant goes before the *y*, then the *y* is changed into *ies*; thus, in boy, there is a vowel before the *y*, we therefore add *s*, boy*s*; but in duty there is a consonant before the *y*, the plural therefore is duti*es*.

Nouns ending in *f* or *fe*, generally form the plural by changing the *f* or *fe* into *ves*; thus, loaf, loav*es*; knife, knive*s*; wife, wive*s*.

Hoof, hoof*s*; proof, proof*s*; reef, reef*s*; and a few others, are exceptions.

Nouns derived from dead or foreign tongues for the most part retain their original plurals; thus—

From the Latin we have—		*From the Greek come—*	
SINGULAR.	PLURAL.	SINGULAR.	PLURAL.
Effluvium	Effluvia	Phenomenon	Phenomena
Radius	Radii	Crisis	Crises
Larva	Larvæ	Hypothesis	Hypotheses
Vortex	Vortices	Criterion	Criteria
Genius	Genii	Automaton	Automata
Genus	Genera	Thesis	Theses
Magus	Magi	Ellipsis	Ellipses
Medium	Media	Metamorphosis	Metamorphoses
Nebula	Nebulæ	Analysis	Analyses
Stratum	Strata.		

The Hebrew words *cherub* and *seraph* form their plurals *cherubim* and *seraphim*; and the French *bœuf* and *monsieur* form their plurals *bœufs* and *messieurs*, which last is contracted into *messrs*.

A few nouns, in very common use, form their plurals quite anomalously; thus—

SINGULAR.	PLURAL.
Man	Men
Foot	Feet
Tooth	Teeth
Mouse	Mice
Goose	Geese.

GENDER.—Gender is that accident of a noun which points out the sex or the absence of sex. Every existence is either male or female, or neither the one nor the other. The Masculine Gender includes all males; the Feminine, all females; and the Neuter, all things destitute of sex, or animals when the sex is not regarded.

Adam Smith remarks, that 'in many languages the qualities both of sex and of the want of sex are expressed by different terminations in the nouns substantive which denote objects so qualified.' After showing that, in Latin, certain *terminations* were appropriated to expressing certain genders, he adds—'The quality [of sex] appears in nature as a modification of the substance; and as it is thus expressed in language by a modification of the noun substantive which denotes that substance, the quality and the subject are in this case blended together, if I may say so, in the expression, in the same manner as they appear to be in the object and in the idea. Hence the origin of the masculine, feminine, and neuter genders, in all the ancient languages.'

Admitting the truth as well as the ingenuity of this speculation, as far as regards ancient languages, it does not appear to be the *genius* of the English language to assign any particular termination (as we find in the Latin) to the different genders; there are, however, some cases in which gender may be recognised from the mere termination of the noun, as will appear from the following table:—

MASCULINE.	FEMININE.
Actor	Actress
Governor	Governess
Heir	Heiress
Lion	Lioness
Master	Mistress.

In some cases difference of sex is expressed by a totally different word, and the gender cannot be known but by knowing the exact idea attached to the word. Of this sort are the following:—

MASCULINE.	FEMININE.
Boy	Girl
Father	Mother
Brother	Sister.

Sometimes the same word is applied to males and females indiscriminately; and when we wish to distinguish the sex, we prefix another word. Thus the word *servant* signifies either a male or a female; but if we desire to notify which, we can use the compound words *man-servant* or *maid-servant*. Of the same kind are *he-goat* and *she-goat*, *cock-sparrow* and *hen-sparrow*, and many others.

CASE.—Case is that accident of a noun which points out the relation which it bears to other parts of the sentence.

Nouns have three cases—Nominative, Possessive, and Objective.

The noun is said to be in the Nominative when it is the subject of discourse, and represents the person or thing of whom or which some assertion is made. Thus in the sentence, 'John reads,' the proper noun *John* is said to be in the Nominative, because it names the person of whom the assertion *reads* is made.

The Possessive represents a vast variety of relations, but the principal one is that of ownership or possession. Thus, 'John's book is lost,' where *John's* is in the possessive, because it names the owner of the *book*.*

The inflection of the Possessive Case (the only case in English that has an inflection) corresponds exactly in import to the preposition *of*. In the line,

'An angel's virtues and a woman's love,'

we could easily dispense with the possessive, and introduce the preposition, where the whole meaning would be preserved; thus,

The virtues *of* an angel and the love *of* a woman.

Adam Smith asserts that inflections would probably be made before *prepositions* were invented; observing very justly, that it requires much less *abstraction* to express the nature of the relation that subsists between two objects *by a change on the name denoting one of them*, than to call into use a class of words expressing relation and nothing else. 'To express relation by a variation in the name of the correlative object, requiring neither abstraction nor generalisation, nor comparison of any kind, would at first be much more natural and easy than to express it by those general words called prepositions, of which the first invention must have demanded some degree of all these operations.'

This speculation is exceedingly ingenious; but whether it be true in general is, to say the least, doubtful; and as far as the possessive of the English noun goes, it must be allowed, we think, to be wide of the truth.

The noun is in the Objective Case—1*st*, when it names the *object* on which the action expressed *by* a transitive verb operates; and 2*d*, when it names the thing *shown* to be related to something else by a preposition. In the sentence, 'John destroyed his book,' *book* is expressing the *object* on which the verbal action operates; it is therefore said to be in the objective case. Again, in the sentence, 'The cloud rises over the hill,' *hill* is in the objective, because it is the word shown to be related to *cloud* by the preposition *over*.

* Concerning the origin of the *possessive* case English grammarians and critics are not agreed. Some maintain that it is what we may call indigenous to the language, corresponding, they affirm, to an inflection of the Saxon noun; but we rather incline to the opinion of Addison, who thinks that the possessive termination is only a contraction for the pronoun *his*. Had the *possessive* case been native to our tongue, it is hardly conceivable that the translators of the Bible would have used such an expression as 'Asa his heart was perfect.' It has been ingeniously objected to Addison's explanation, that while it is very easy to see how 'the king his crown' might have been contracted or corrupted into 'the king's crown,' it is impossible to imagine that 'the queen her crown,' or 'the children their bread,' could have been subjected to the same contraction. But surely this objection is not unanswerable; for when the convenience of the contraction was seen in the case of singular nouns masculine, it might very easily be transferred to nouns feminine and plural. We would not be understood, however, to speak confidently on the point; and in whatever way the possessive was introduced, it is now impossible, supposing it were desirable, to displace it.

The Nominative and Objective of nouns are alike in form; and it is only by observing how the noun stands related to other words, that we can say when it is in the one and when in the other. To decide on the case of a noun, we must 'look before and after.' The Possessive, however, may be recognised by its form, as well as by its function, as it for the most part ends with 's in the singular, and ' after the *s* in the plural.

A noun is thus declined:—

	SINGULAR.	PLURAL.
Nominative.	Brother	Brothers
Possessive.	Brother's	Brothers'
Objective.	Brother	Brothers.

When the plural does not end in *s*, the Possessive is formed in the same way as the singular; thus—

	SINGULAR.	PLURAL.
Nominative.	Man	Men
Possessive.	Man's	Men's
Objective.	Man	Men.

Inflection of Adjectives.

In many languages the Adjective is changed in termination, to correspond with the noun which it qualifies; but in the English tongue there is no such modification; and here, as in many other respects, our language seems superior in metaphysical propriety to most others, because the accident of gender cannot properly belong to a quality which is itself but an accident and no self-existing thing. 'Gender,' it is observed by Adam Smith, 'cannot properly belong to a noun adjective, the signification of which is always precisely the same, to whatever species of substantives it is applied. When we say "a great man," "a great woman," the word *great* has precisely the same meaning in both cases, and the difference of the sex in the subjects to which it may be applied makes no sort of difference in its signification. *Magnus, magna, magnum*, in the same manner, are words which express precisely the same quality, and the change of the termination is accompanied with no sort of variation in the meaning. Sex and gender are qualities that belong to substances, but cannot belong to the qualities of substances.'

But while the nature of the thing which the adjective is employed to express cannot be varied, yet it may exist in different proportions; and hence the adjective is varied to express different degrees of the quality indicated by it, and these variations are called Degrees of Comparison.

When the simple quality is denoted, the adjective is said to be in the Positive Degree. When a higher degree is signified, the adjective is in the Comparative; and when the highest degree is expressed, it is said to be in the Superlative. Logically considered, indeed, the *positive* involves the idea of comparison as much as the comparative: thus, when we affirm of a mountain that it is *lofty*, we must have a tacit reference to other mountains; when we affirm of any particular river that it is *rapid*, we (unconsciously, perhaps, but yet actually) make a comparison between it and some other rivers. We consider it, therefore, impossible to state any essential difference between the *degrees of comparison*; but in addition to what we have already said, we may mention that the *comparative degree* denotes that the quality expressed by it belongs to one of two objects in a greater degree than to the other; and the superlative, that it belongs to one of several in a greater degree than to any of the rest. For example, when we say that the line A——— is longer than the line B——, the meaning is, that both lines have a certain quality—length, but that A has more of it than B. When the comparison is drawn between more things than two, we use the *superlative*. Thus, we say of the lines A——, B———, C————, D——, that C is the longest. In the same way, speaking of stone and wood, we might say, 'Stone is the *harder* body of the two;' but if we are discoursing of iron, stone, and wood, we must use the superlative, and say, 'Iron is the *hardest* body of the three.'

The whole class of Numeral Adjectives, from their

very nature, cannot be in any other degree than the positive; and with respect to Attributive Adjectives, it is to be observed that those only which express a quality which may exist in greater or less proportions can be compared: for instance, if the exact *ideas* represented by the words *circular*, *square*, *triangular*, and also such words as *chief*, *extreme*, *universal*, *true*, and *eternal*, be apprehended by the mind, by the very act of apprehension it will be seen that it would be contradictory to their nature to admit of any increase. Let the student reflect on this, and then he will be able to dispense with rules about the use of *chief*, *perpendicular*, &c. because he will see at once, from the nature of the idea suggested by the word, whether it admits of increase or diminution.

The Comparative is formed by adding *er* to the Positive, if it end with a consonant, and *r* simply, if it end in the vowel *e*; thus, hard, harder; large, larger.

Adjectives compared in this manner are said to be Regular; but some adjectives follow no fixed rule in forming their degrees of comparison, and these are called Irregular. The following are those most commonly in use:—

POSITIVE.	COMPARATIVE.	SUPERLATIVE.
Good	Better	Best
Bad	Worse	Worst
Little	Less	Least
Much *or* many	More	Most
Late	Later	Latest or last
Near	Nearer	Nearest or next.

Sometimes the same idea is conveyed by prefixing an adverb to the adjective in its simple state: thus instead of saying *juster*, we might say *more just*; but it is not therefore to be inferred that *more just* is the comparison of *just*. Were this principle admitted, we should soon have inextricable confusion. In such cases, *more* is an adverb in the comparative, qualifying the adjective *just*, and the two words should be parsed separately. The prefixing of an adverb cannot, with any justice, be called a variation of the adjective.

A few adjectives have a plural form, particularly the demonstrative, *this* and *that*; in the plural, *these* and *those*: *one*, *other*, and *another*, are also sometimes varied by number or case.

Inflection of Pronouns.

The Pronoun, like the Noun, is varied by Gender, Number, Person, and Case.

The Personal Pronouns are thus declined:—

SINGULAR NUMBER.

	NOMINATIVE.	POSSESSIVE.	OBJECTIVE.
1*st Person*,	I	Mine	Me
2*d* ...	Thou	Thine	Thee
3*d* ...	He, she, it	His, hers, its	Him, her, it.

PLURAL NUMBER.

	NOMINATIVE.	POSSESSIVE.	OBJECTIVE.
1*st Person*,	We	Ours	Us
2*d* ...	Ye *or* you	Yours	You
3*d* ...	They	Theirs	Them.

By inspecting the two following lines, the student will understand what we meant by saying, that the Possessive Pronouns, or, as we prefer calling them, Pronominal Adjectives, were derived from, and corresponded with, the personal pronouns:—

I	thou	he	she	it	we	you	they
mine	thine	his	hers	its	ours	yours	theirs.

The Relative and Interrogative Pronouns, *who* and *which*, are alike in both numbers, and are thus declined:—

	Who.	*Which.*
Nominative.	Who	Which
Possessive.	Whose	Whose
Objective.	Whom	Which.

That and *as* are indeclinable.

Inflection of Verbs.

The Verb is varied in *four* ways—namely, by Number, Person, Mood, and Tense.

There are two Numbers—singular and plural—as in the case of the noun; and three Persons, as in the pronouns.

The Moods are generally reckoned *five* in number—the Indicative, the Subjunctive, the Potential, the Imperative, and the Infinitive. But it may well be questioned if there is any real ground for such distinction, as far at least as the Subjunctive and Potential are concerned. The Subjunctive, as it is called, is merely an elliptical mode of expression, and the Potential is made up of two or more verbs, and therefore it can with no propriety be called an *inflection* of any one of them.

This leaves us the Indicative, by which simple assertions are made; the Imperative, by which commands are issued; and the Infinitive, which is neither more nor less than the name of the verb, and in use corresponds exactly to a noun.

The Tenses are two in number—the Present and the Past: the Future is not expressed by any *inflection* of the verb in English, as it is in Latin, French, and other languages, but by the help of another verb; and it is surely absurd to force a distinction upon the English verb merely because it exists in Latin.*

The Participles of the verb are likewise two in number—the Perfect and the Imperfect. They are often called the Present and Past, but in themselves they have no reference to time, and merely indicate the *completion* or *non-completion* of an action.

According to this view of the verb—the only consistent one—it has no such thing as a passive voice. What is called the passive voice is not formed by any variety of termination, and so cannot be acknowledged as an *inflection*, without opening a door to all manner of confusion.

'The English verb,' says Crombie in his 'Treatise on the Etymology and Syntax of the English Language,' 'has only one voice—namely, the active. Dr Lowth, and most other grammarians, have assigned it two voices—active and passive. Lowth has in this instance not only violated the simplicity of our language, but has also advanced an opinion inconsistent with his own principles. For if he has justly excluded from the number of cases in nouns, and moods in verbs, those which are not formed by inflection, but by the addition of prepositions and auxiliary verbs, there is equal reason for rejecting a passive voice, if it be not formed by variety of termination. Were I to ask him why he denies *from a king* to be an ablative case, or *I may love* to be the potential mood, he would answer, and very truly, that those only can be justly regarded as cases or moods which, by a different form of the noun or verb, express a different relation or a different mode of existence. If this answer be satisfactory, there can be no good reason for assigning to our language a passive voice, when that voice is formed not by inflection, but by an auxiliary verb. *Doceor* [being an inflection of the word *doceo*] is truly a passive voice; but *I am taught* cannot, without impropriety, be considered as such.'

By *conjugating* a verb is meant mentioning the present and past tenses and the perfect participle.

The past tense and perfect participle are formed from the present tense by adding *ed* if it end in a consonant, as *rain*, *rained*; and simply *d* if it end in a vowel, as *change*, *changed*.

If these parts are formed in any other way, the verb

* A little reflection may, I think, suffice to convince any person that we have no more business with *a future tense* in our language than we have with the whole system of Latin moods and tenses; because we have no modification of our verbs to correspond to it; and if we had never heard of a future tense in some other language, we should no more have given a particular name to the combination of the verb with the auxiliary *shall* or *will*, than to those that are made with the auxiliaries *do*, *have*, *can*, *must*, or any other.—PRIESTLEY'S *Rudiments of English Grammar*.

is called Irregular; and if it wants any of them, it is said to be Defective.

We subjoin a few of the Irregular Verbs in most frequent use, or in which mistakes are apt to arise:—

PRESENT.	PAST.	PERFECT PARTICIPLE.
Am	was	been
Arise	arose	arisen
Awake	awoke *r* *	awaked
Bear (to carry)	bore	borne
Bear (to bring forth)	bare	born
Bereave	bereft *r*	bereft
Beseech	besought	besought
Bid	bade	bid
Bite	bit	bitten
Build	built *r*	built
Catch	caught	caught
Choose	chose	chosen
Cleave (to split)	cleft, clove	cleft, cloven
Cleave (to cling to)	clave	cleaved
Clothe	clothed	clothed, clad
Crow	crew	crowed
Dare (to venture)	durst	dared
Dare (to challenge)	dared	dared
Deal	dealt	dealt
Drink	drank	drunk, drunken
Eat	ate	eaten
Fly	flew	flown
Freeze	froze	frozen
Hang	hung	hung, hanged
Hide	hid	hidden, hid
Lay (to deposit)	laid	laid
Lie (as on a bed)	lay	lain
Ring	rang, rung	rung
Rive	rived	riven
Run	ran	run
Shake	shook	shaken
Shoe	shod	shod
Shrink	shrunk	shrunk
Slink	slunk	slunk
Spit	spit	spit
Swim	swam, swum	swum
Take	took	taken
Tare	tore	torn
Tread	trod	trodden
Wax	waxed, waxen	waxed
Wear	wore	worn
Win	won	won
Worked	wrought	wrought *r*.

The Regular Verb is thus inflected:—

To Love.

Present Tense.	*Past Tense.*	*Perfect Participle.*
Love.	Loved.	Loved.

PRESENT TENSE.

SINGULAR.	PLURAL.
1*st Person*, I love	1*st Person*, We love
2*d* ... Thou lovest	2*d* ... Ye *or* you love
3*d* ... He loves.	3*d* ... They love.

PAST TENSE.

SINGULAR.	PLURAL.
1. I loved	1. We loved
2. Thou lovedst	2. Ye *or* you loved
3. He loved.	3. They loved.

Imperative, Love. *Infinitive*, To love.

PARTICIPLES.

Imperfect, Loving. *Perfect*, Loved.

The verb *To Write* is irregular, and is thus conjugated and declined:—

To Write.

Present Tense.	*Past Tense.*	*Perfect Participle.*
Write.	Wrote.	Written.

PRESENT TENSE.

SINGULAR.	PLURAL.
1. I write	1. We write
2. Thou writest	2. Ye *or* you write
3. He writes.	3. They write.

PAST TENSE.

SINGULAR.	PLURAL.
1. I wrote	1. We wrote
2. Thou wrotest	2. Ye *or* you wrote
3. He wrote.	3. They wrote.

Imperative, Write. *Infinitive*, To write.

PARTICIPLES.

Imperfect, Writing. *Perfect*, Written.

* The verbs which are conjugated regularly as well as irregularly are marked with an *r*. Thus the past tense of *awake* is either *awoke* or *awaked*; of *build*, *builded*, or *built*.

The Irregular Verbs, *Be*, *Do*, *Have*, and the Defective Verbs, *Shall*, *Will*, *May*, *Can*, from their frequent occurrence, ought to be carefully examined. Tables of them are here presented:—

To Be.

Present Tense.	*Past Tense.*	*Perfect Participle.*
Am.	Was.	Been.

PRESENT TENSE.

SINGULAR.	PLURAL.
1. I am	1. We are
2. Thou art	2. Ye *or* you are
3. He is.	3. They are.

PAST TENSE.

SINGULAR.	PLURAL.
1. I was	1. We were
2. Thou wast	2. Ye *or* you were
3. He was.	3. They were.

Imperative, Be. *Infinitive*, To be.

PARTICIPLES.

Imperfect, Being. *Perfect*, Been.

The verb *To Be* has a peculiar inflection, to express contingency or conditionality, which we here subjoin. It may be called the Conditional or Subjunctive Mood. In the case of other verbs, this form is elliptical.

CONDITIONAL TENSE OF THE VERB TO BE.

SINGULAR.	PLURAL.
1. I were	1. We were
2. Thou wert	2. Ye were
3. He were.	3. They were.

To Do.

Present Tense.	*Past Tense.*	*Perfect Participle.*
Do.	Did.	Done.

PRESENT TENSE.

SINGULAR.	PLURAL.
1. I do	1. We do
2. Thou doest *or* dost	2. Ye do
3. He does or doeth.	3. They do.

PAST TENSE.

SINGULAR.	PLURAL.
1. I did	1. We did
2. Thou didst	2. Ye did
3. He did.	3. They did.

Imperative, Do. *Infinitive*, To do.

PARTICIPLES.

Imperfect, Doing. *Perfect*, Done.

To Have.

Present Tense.	*Past Tense.*	*Perfect Participle.*
Have.	Had.	Had.

PRESENT TENSE.		PAST TENSE.	
SINGULAR.	PLURAL.	SINGULAR.	PLURAL.
1. I have	1. We have	1. I had	1. We had
2. Thou hast	2. Ye have	2. Thou hadst	2. Ye had
3. He has.	3. They have.	3. He had.	3. They had.

Imperative, Have. *Infinitive*, To have.

PARTICIPLES.

Imperfect, Having. *Perfect*, Had.

Shall.

PRESENT TENSE.		PAST TENSE.	
SINGULAR.	PLURAL.	SINGULAR.	PLURAL.
1. I shall	1. We shall	1. I should	1. We should
2. Thou shalt	2. Ye shall	2. Thou shouldst	2. Ye should
3. He shall.	3. They shall.	3. He should.	3. They should.

Will.

PRESENT TENSE.		PAST TENSE.	
SINGULAR.	PLURAL.	SINGULAR.	PLURAL.
1. I will	1. We will	1. I would	1. We would
2. Thou wilt	2. Ye will	2. Thou wouldst	2. Ye would
3. He will.	3. They will.	3. He would.	3. They would.

May.

PRESENT TENSE.		PAST TENSE.	
SINGULAR.	PLURAL.	SINGULAR.	PLURAL.
1. I may	1. We may	1. I might	1. We might.
2. Thou mayst	2. Ye may	2. Thou mightst	2. Ye might
3. He may.	3. They may.	3. He might.	3. They might.

CAN.

PRESENT TENSE.		PAST TENSE.	
SINGULAR.	PLURAL.	SINGULAR.	PLURAL.
1. I can	1. We can	1. I could	1. We could
2. Thou canst	2. Ye can	2. Thou couldst	2. Ye could
3. He can.	3. They can.	3. He could.	3. They could.

Inflection of Adverbs.

Adverbs for the most part admit no modification or inflection: a few, however, are compared like adjectives.

Some are Regular, as—

POSITIVE.	COMPARATIVE.	SUPERLATIVE.
Soon	Sooner	Soonest
Often	Oftener	Oftenest
Seldom	Seldomer	Seldomest.

Others are Irregular, as—

POSITIVE.	COMPARATIVE.	SUPERLATIVE.
Well	Better	Best
Badly *or* ill	Worse	Worst
Little	Less	Least
Much	More	Most.

The student will now be able to *parse* a sentence, mentioning not merely what part of speech any word is, but what *inflection* it has undergone, and how it stands related to other words. By way of example, we shall parse one sentence from Bacon :—

'A single life doth well with churchmen; for charity will hardly water the ground where it must first fill a pool.'

A, a numeral adjective, qualifying the noun *life*. It is commonly called the indefinite article.

Single, an attributive adjective, designating the noun *life*. It cannot be compared.

Life, a noun, singular number, neuter gender, and the nominative case, because it is the thing of which something is asserted. The plural of *life* is *lives*.

Doth, a verb, because it asserts something of the noun *life*: it is in the present tense, indicative mood, and the third person singular, to agree with its noun *life*. *Doth* is now almost obsolete, *does* being the word in common use. The verb *To Do* is conjugated thus: *Present Tense*, Do; *Past*, Did; *Perfect Participle*, Done.

Well, an adverb, expressing how 'a single life doth.' *Well* is in the positive degree, and is compared thus: *Positive*, Well; *Comparative*, Better; *Superlative*, Best.

With, a preposition, used in a metaphorical sense, to connect *churchmen* with *single life*.

Churchmen, a noun plural, masculine, and the objective; being the object shown to be related to something else by the preposition *with*. The singular is *churchman*. All nouns, it should be remembered, are of the third person.

For, a conjunction, connecting the clause that follows with the one which went before.

Charity, a noun, being *primarily* the name of a disposition of mind, and *secondarily* of the course of action resulting from that disposition; singular number, neuter gender, and the nominative to the verb *will*.

Will, a verb, present tense, singular number, and third person, to agree with *charity*.

Hardly is an adverb of degree, qualifying the verb *water*.

Water is a verb in the infinitive mood. *To*, the sign of the infinitive, is suppressed after a great number of verbs, and *will* is one of them. *Will* is a defective verb, and is conjugated thus:—*Present Tense*, Will; *Past Tense*, Would.

The, a numeral adjective, or definite article, qualifying the noun *ground*.

Ground, a noun, singular, neuter, and the objective, being the *thing* which is affected by the verb *water*.

Where is of the nature of a conjunction, since it unites the two members of the last clause; but it also has in it the force of an adverb, being equivalent to *in the case in which*. We may therefore call it a conjunctive adverb.

It is a personal pronoun, singular, neuter, and third person, supplying the place of the noun *charity*. *It* is the nominative to the verb *must*.

Must is a verb, asserting something of the pronoun *it*. It is in the present tense, and third person singular.

First is an adverb of time, qualifying the verb *fill*.

Fill is a verb in the *infinitive*, to being understood after *must*, in the same way as it was after *will*, in the former part of the sentence.

A, a numeral adjective, or indefinite article, designating the noun *pool*.

Pool, a noun, singular, neuter, and objective case, being the thing affected by the transitive verb *fill*.

Additional Remarks.—Before quitting this division of our subject, we must inform the reader that the same word is frequently used in different ways, and consequently belongs to different parts of speech. Nothing can be more certain than that every word must have been originally significant of only one idea; but in the progress of language other ideas attach themselves to it, and the grammarian must not resist this extension of meaning, but carefully observe it. To discover, then, what class of words any word belongs to, we must 'look before and after;' but a few examples will illustrate our meaning best.

'Come out of the *wet*.' Here *wet* is a noun, because it is a name expressive of a certain state of the elements. 'John threw off his *wet* clothes.' Here *wet* is an adjective, because it qualifies the noun *clothes*. 'A shower came on and *wet* the ground.' Here *wet* is a verb, because it expresses an action. The shower did something—'wet the ground.'

On the following examples let the student exercise himself, in satisfying himself as to the justness of our assertions with regard to the *class* of those words which may belong to one or more :—

1. The sun is the great source of *light* (noun).
   Feathers are *light* (adjec.).
   —— And nightly *lights* (verb) the waters with her sheen.
2. Beloved, let us *love* (verb) one another; for *love* (noun) is of God.
3. Then he arose and rebuked the winds and the sea, and there was a great *calm* (noun).

   Thy brow is *calm* (adjec.) and bright,
   Wearing no trace of sorrow or of sin.

   To still the pang that conscience can impart,
   And *calm* (verb) the restless pulses of the heart.

   How often have I loitered o'er thy *green* (noun),
   Where humble happiness endeared each scene.

   Yet wandering, I found, on my ruinous walk,
   By the dial-stone aged and *green* (adjec.).

5. Thy *nightly* (adjec.) visits to my chamber made.

   When the blue wave rolls *nightly* (adverb).
   On deep Galilee.

6. Yes, there are charms *that* (rel. pron.) scorn the spoiler Time!

   Blessed are those,
   Whose blood and judgment are so well commingled,
   That (conjunc.) they are not a pipe for fortune's finger
   To sound what stop she pleases. Give me *that* (demon. adjec.) man
   That (rel. pron.) is not passion's slave, and I will wear him
   In my heart's core.

7. The common *still* (noun) can only be employed, &c.

   Hope quickens the *still* (adjec.) parts of life.

   Is this the Talbot so much feared abroad,
   That with his name the mothers *still* (verb) their babes?

   It hath been anciently reported, and is *still* (adverb) received, &c.

   John has been very foolish, *still* (conjunc.) I will not dismiss him.

Let the student further exercise himself in what respects one part of speech resembles another, and wherein it differs. He will find that the noun and pronoun, adjective and adverb, preposition and conjunction, resemble each other in some respects, but that they yet are quite distinct.

We conclude this subject with two brief extracts from Locke's 'Essay on the Human Understanding,' book iii. chap. 7 :—'Besides words which are names of ideas in the mind, there are a great many others that

are made use of to signify the connection that the mind gives to ideas or propositions one with another. The mind, in communicating its thought to others, does not only need signs of the ideas it has then before it, but others also, to show or intimate some particular action of its own, at that time, relating to those ideas. This it does several ways; as *is* and *is not* are the general marks of the mind affirming or denying. But besides affirmation or negation, without which there is in words no truth or falsehood, the mind does, in declaring its sentiments to others, connect not only the parts of propositions, but whole sentences, one to another, with their several relations and dependencies, to make a coherent discourse.

Though prepositions and conjunctions are names well known in grammar, and the particles contained under them carefully ranked into their distinct subdivisions, yet he who would show the right use of particles, and what significancy and force they have, must take a little more pains, enter into his own thoughts, and observe nicely the several postures of his mind in discoursing.'

Whoever wishes really to understand the nature and use of words, should study carefully the third book of Locke's invaluable essay.

III.—DERIVATION.

Derivation is that part of Etymology which traces words to their original form and signification.

The ideas attached to words are purely arbitrary and conventional; there being no reason, for instance, why the sound represented by the combination of letters *f i r e* should suggest the idea of heat, while that of *i c e* should give the notion of cold. From this principle it follows, that the real import of any word can be ascertained only by *induction*—that is, by observing the common idea which it suggests in every different position that it may occupy. Some, indeed, have affirmed, that in order to ascertain with precision the philosophical import of a word, it is necessary to trace its progress historically, through all the successive meanings it has been employed to convey, from the moment that it was first introduced into the language; and others, not content with this, prosecute their etymological research till they arrive at the literal and primitive sense of the root from which it springs. But it may well be doubted if such a course of procedure is followed by any substantial benefit at all proportionate to the labour which it imposes on the student; and one thing is certain, that an appeal to etymology from use is altogether nugatory, and displays an utter ignorance of the nature and function of words. The derivation or pedigree of a word will by no means universally lead to its real meaning. Horne Tooke and his followers have employed themselves in tracing words to their sources, and with wonderful success; but their speculations, however interesting in some respects, are almost useless, as far as the grammar of our language is concerned; and certainly, though that school of philologists should succeed to their utmost desire in chasing every word now in use up to some Icelandic or Gothic origin, it would in no way interfere with the present structure of the English tongue. It may be very interesting to trace our language from the period when it was only the rude jargon of wandering hordes of savages, down to the present time, when it is capable of expressing with precision the minutest distinctions of the metaphysician or the most glowing conceptions of the poet; but it belongs rather to the philologist to enter on such investigations than the grammarian. Still, some ground is common to both, and it is necessary to say a few words on the subject.

Words are usually divided into two classes—*Primitive* and *Derivative*.

A Primitive word is one not derived from any other word in the language; as, *man*, *school*.

A Derivative word is either compounded of two significant words in the language, or of one significant word and some termination that modifies its meaning; as, *schoolman*, *scholar*.

The bulk of the English language is Anglo-Saxon, and so are the forms of its grammar. A considerable number of its words, however, are from the Latin, and not a few from the Greek, both as entire words, and as parts of words or prefixes. [For further information on this point, the reader is referred to the article LANGUAGE, No. 52.] The following is a list of these Prefixes, together with examples of the manner in which they enter into combination with other words:—

LATIN PREFIXES.

A, *ab*, or *abs*, from; as, *avert*, to turn from; *absolve*, to loose from; *abstract*, to draw from; *abnormal*, from the rule.
Ad, to; as, *adhere*, to stick to.
Am, round about; as, *ambition*, literally, a going round about.
Ante, before; as, *antecedent*.
Circum, round; as, *circumnavigate*.
Con, *col*, *cor*, together; as, *conjoin*, *convoke*, *collect*, *correct*—the *n* being changed into *l* and *r* respectively for the sake of euphony.
Contra, against; as, *contradict*.
De, down; as, *destroy*, *demolish*.
Di or *dis*, asunder; as, *divert*, *dissolve*.
E or *ex*, out of; as, *evolve*, *extract*.
Extra, beyond; as, *extraordinary*.
In, in or into; as, *inject*.
Inter, between; as, *intervene*.
Intro, within; as, *introduce*.
Juxta, nigh to; as, *juxtaposition*.
Ob, *op*, in the way of; as, *obstruct*, *oppose*.
Per, through; as, *perforate*.
Post, after; as, *postpone*.
Pre, before; as, *prefix*.
Pro, instead of; as, *pronoun*.
Preter, beyond; as, *preternatural*.
Re, back; as, *replace*.
Retro, backward (implying motion); as, *retrograde*.
Se, aside; as, *secede*.
Sub, under; as, *sublunary*.
Super, above; as, *superinduce*, *superfluous*.
Trans, across; as, *transport*, *transatlantic*, *transgress*.

GREEK PREFIXES.

A, without; as, *anomalous*, *amorphous*.
Amphi, both; as, *amphibious*.
Ana, up, through; as, *anatomy*.
Anti, against; as, *Antichrist*.
Apo, from, away; as, *apostate*.
Cata, down; as, *catastrophe*.
Dia, through; as, *diagonal*.
Epi, upon; as, *epilogue*, *epidemic*.
Hyper, overmuch; as, *hypercritical*.
Hypo, under; as, *hypocrite*.
Meta, change; as, *metamorphosis*.
Para, near to; as, *paraphrase*.
Peri, round about; as, *perimeter*.
Syn, together; as, *synod*, *synagogue*.

Affixes.

It is not so easy to trace the Affixes to their original meaning, as they now seldom retain any signification when taken by themselves, but are used merely to modify other words. We shall present a few of them, with examples, but we are far from thinking that the list is complete:—

AFFIXES FORMING NOUNS.

an *ant* *er* *ard* *ary* *ery* *ent* *or* *ist* *or* *ster*	denoting the agent, or doer of a thing; as,	Tragedi*an*, histori*an*. Claim*ant*, combat*ant*. Scholar, liar. Drunk*ard*, dot*ard*. Adver*sary*, actu*ary*. Engin*eer*, auction*eer*. Adher*ent*, correspond*ent*. Accuse*r*, believe*r*. Apolog*ist*, Chart*ist*. Act*or*, Creat*or*. Pun*ster*, spin*ster*.

AFFIXES FORMING VERBS.

en *fy* *ise* or *ize* *ate*	denoting to make or cause; as,	Harden, strength*en*. Puri*fy*, clari*fy*. Civil*ise*, equal*ize*. Allen*ate*, assassin*ate*.

AFFIXES FORMING ADJECTIVES.

ful *ous* *ly* *some* *y* *ical* *ive*	denoting full of, or abounding in; as,	Art*ful*, beauti*ful*. Bounte*ous*, plenteo*us*. Father*ly*, home*ly*. Trouble*some*, toil*some*. Wealth*y*, migh*ty*. Democrat*ical*, method*ical*. Expens*ive*, instruct*ive*.

AFFIXES FORMING ABSTRACT NOUNS.

ment *ness* *sion* *tion* *ty* *hood* *ship* *dom* *ric* *tude*	denoting state of, considered abstractedly.	Amus*ement*, abat*ement*. Good*ness*, hard*ness*. Convul*sion*, expan*sion*. Produ*ction*, vindica*tion*. Pi*ety*, probi*ty*. Child*hood*, man*hood*. Friend*ship*, court*ship*. Christen*dom*, king*dom*. Bishop*ric*. Lassi*tude*, forti*tude*.

All words must originally have had only one meaning, but subsequently they come to have various secondary significations. These are attached to them according to fixed laws of the association of ideas; but in the case of each individual word, the signification must be inferred from the relation which it bears to the other words with which it stands connected.

A very large and important class of words, whose primary signification refers to the operation of sensible things, are applied secondarily to modes of thinking; as, imagine, apprehend, comprehend, adhere, conceive, instil, disgust, disturbance, tranquillity, abstraction, sincere, foresight, penetration, acuteness, inclination, aversion, deliberation, sagacity, attention, &c. But the prosecution of this subject falls more within the province of the logician than the grammarian, and here we may draw our observations on derivation to a close.

SYNTAX.

SYNTAX—from two Greek words, *syn*, together, and *taxis*, a putting or placing—is that part of grammar which shows how words are connected and arranged.

Etymology, we have seen, treats of the materials of language, *individual words*; but it is the business of Syntax to point out by what rules these words are put together, so as to form *sentences*. By a *sentence* is meant a number of words so united as to make sense; that is, to declare or affirm something: thus the words, 'The city of Edinburgh,' do not form a sentence, because they declare nothing; but if we say, 'The city of Edinburgh is the capital of Scotland,' a distinct assertion is made, and therefore the words form a sentence.

We must here remind the reader that every sentence must contain at least a subject and a predicate, the subject being the thing spoken of, and the predicate the action or state of being affirmed of it.

When the verb forming the predicate is transitive, the word which it affects is called the *object*: thus in the sentence, 'John learns his lesson,' *John*, being the subject of discourse, is in the nominative, and *lesson*, being the thing affected by the predicate *learns*, is in the objective case.

RULES OF SYNTAX.

Rule I.—Nominative and Verb.

A verb agrees with its nominative in number and person; as, *I read, he learns.*

This rule is of very extensive application, and if understood in its full import, it will render useless many others that are commonly set down by grammarians. It may be expressed in more general terms thus: The number and person of the subject of a sentence determine the number and person of the verb. For example, in the sentence, 'John runs,' *John*, the subject, is singular, and, like all nouns, of the third person; we therefore use the third person singular of the verb, *runs*. Again, in the sentence, 'John and James read,' the subject, *John* and *James*, expresses an idea of more than one, and so the verb must be plural—*read*, not *reads*, as it would have been had only one name been mentioned. In this sentence, 'John or James intends to accompany me,' it is obvious, from the very nature of the conjunction *or*, that *intention* is predicated or asserted only of one of the persons, and therefore the verb is in the singular, *intends*.

As collective nouns, though singular in form, may yet suggest the idea of plurality, they are joined either to a singular or a plural verb, according as the idea suggested is that of unity or plurality. Thus when we say, 'The army *is* on its march,' we seem to lose sight of the individuals composing the idea represented by the word *army*, and speak of it as one mass; but if we say, 'The peasantry *go* barefooted,' this mode of expression seems to give us an idea of a number of people existing separately, and we therefore put the verb in the plural. With respect to the collective noun, the only thing further to be observed is, that if in one part of the sentence it is made to stand as singular, it ought not in another to be used as plural.

A noun is sometimes put in the nominative, even when it is not the *subject* of the sentence, but merely stands connected with a participle; thus in these lines of Cowper—

> 'Thou, as a gallant bark from Albion's coast
> (The *storms* all weathered, and the *ocean* crossed)
> Shoots into port,' &c.

the words *storms* and *ocean*, joined to the participles *weathered* and *crossed*, are neither the nominatives to any verb, nor are they the *object* affected by a transitive verb or a preposition. Still, they are in the nominative; and this construction is known among grammarians as the nominative absolute. Some grammarians, indeed, contend, and not without reason, that there is an absolute case, quite distinct from the nominative; and that to speak of the 'nominative absolute' involves a contradiction of ideas. It must at once be conceded, that the noun conveys very different ideas in the two cases referred to, and we cannot well deny that they ought to have separate names, in the same manner as we give different names to the nominative and objective, although they are the same in form.

In every case, the *idea* represented by the *subject* must be carefully noticed, and then the *predicate* be conformed to it.

To each rule we shall subjoin a few examples of erroneous construction, being persuaded, in common with Crombie, of the truth of Lowth's remark, that a good way 'of teaching right, is to show what is wrong.'

1. This *course* of lectures *were* delivered last spring.
2. In the human species, the *influence* of reason and instinct *are* generally assisted by the lessons of experience.
3. *Was you* present at the meeting?
4. There *are abundance* of treatises on that subject.
5. At this time, *the House of Commons were* of little weight.
6. *Every one* of these theories *are* unfounded.
7. *Was* the *master and his scholars* there?

Rule II.—Possessive Case.

When the relation of ownership is to be pointed out, the Possessive Case of the noun denoting the owner is used: thus, 'This is John's hat.' Here the relation of ownership is to be declared as existing between the person *John* and the thing *hat*, and consequently the name of the possessor is put in the possessive case.

If the name of the owner be a compound name, the last of the component parts only receives the sign of the possessive: thus, 'the Queen of Great Britain's prerogative;' also when there are two separate names, as, 'Robertson and Reid's office.'

1. This is John Thomson *his* book.
2. James is in *Walker's and Son's* office.
3. Charles is a member of the *Mechanic's* Institution.
4. Have you read *Chamber's* Journal?

Rule III.—Objective Case.

Active transitive verbs and prepositions take the Objective Case after them thus: 'Do *justice*, love *mercy*, and walk humbly with *God*.' In this sentence, *justice* and *mercy* are in the objective, being affected by the verbs *do* and *love* respectively; and *God* is also in the objective, being the object of the relation pointed out by the preposition *with*.

Some active transitive verbs appear to take two objective cases after them; but it is much more consistent with the analogy of the language to understand a preposition: thus, 'He sent me the book,' where *me* and *book* are both in the objective. It is quite clear that *book* is the thing immediately affected by the verb *sent*, it therefore must be in the objective; but as to *me*, it seems most natural to understand the preposition *to*, when the sentence would be, 'He sent the book to me.' Ellipses of this sort are quite common, and it is altogether unnecessary to bring in any new grammatical rule or principle to account for idiomatic expressions thus produced.

Under this rule we may further observe that all words denoting *measure*, whether of time or space, are capable of being put in the objective, a preposition being understood. Thus in the sentences, 'The wall is seven *feet* high,' 'I was three *days* in the country,' the words *feet* and *days* are in the objective, the preposition *for* or *during* being understood. As, however, the nominative and objective of all nouns in English are alike (suffer no inflexion), this remark must be allowed to be of limited utility.

1. I *told ye* that I would come.
2. *Who* should I *love*, if not my father?
3. Do you know *who* you speak *to?*
4. *He* that can doubt whether he be anything or not, I speak not *to*.—LOCKE.

Rule IV.—Pronouns.

Pronouns agree in gender, number, person, and case with the nouns for which they stand, and are in all respects to be treated as the nouns would have been had they been used. In the sentence, 'The master instructs *his* pupils,' the pronoun supplies the place of the possessive case of the noun *master*, which *is* of the singular number, third person, and masculine gender; we therefore use *his*, which corresponds to all this. Again, 'John and James learn *their* lesson:' here *their* stands for two nouns, and so must be plural.

1. Thou shalt also make a *laver* of brass, and *his* foot also of brass.
2. For my *name and memory*, I leave *it* to men's charitable speeches, and to foreign nations, and to the next age.—BACON.
3. Rebekah took gladly *raiment* that was in the house, and put *them* on Jacob.
4. I saw the whole *species* delivered from *their* sorrows.—ADDISON.
5. Those are the *birds whom* we call gregarious.

Rule V.—The Infinitive.

One verb governs another in the Infinitive: as, 'He loves to study,' where *to study* is the object of the verb *loves*.

Before the verb denoting the object of the predicating verb, the preposition *to* is generally put; and it is in this case called the *sign of the infinitive*. But as we already saw that the infinitive is nothing but a noun, the utility of this rule may well be questioned.

The sign *to* is omitted after the following verbs:—Bid, can, dare, feel, hear, let, make, may, must, need, shall, see, and will. We do not say, 'He bade me to go,' but, 'He bade me go.' The infinitive of a verb may also come after a noun or an adjective, as well as after another verb.

1. Sylla *obliged* them *submit* to such terms as the *senate were* pleased to impose. (See also Rule I.)
2. The king *caused* them *feel* the weight of his displeasure.
3. I *desired* him *call* in the evening.
4. You *need* not *to trouble* yourself on my account.
5. God *maketh* the sun *to rise* on the evil and on the good.

Rule VI.—Apposition.

Nouns and pronouns added to other nouns and pronouns to explain them, are put in the same case; thus, 'Edinburgh, the capital of Scotland, is celebrated for its university.' Here *Edinburgh*, being the subject of the sentence, is in the nominative; and the noun *capital*, with its adjunct *of Scotland*, being added to explain it, is in the nominative also. The two words, in cases of this kind, are said by grammarians to be in apposition.

'Brutus killed Cæsar in the Capitol; him who had been his friend.' Here *Cæsar* is in the objective, governed by the verb *killed*; and as the succeeding pronoun refers to it, it must be in the objective too. If it were *he*, there would be no violation of any rule in grammar, but a misrepresentation of a historical fact, as it would lead us to believe that Brutus befriended Cæsar, whereas it was Cæsar that had befriended Brutus.

There seems to be an exception to this rule in such expressions as, 'I called at Smith's the bookseller,' where *Smith's* and *bookseller* are evidently marks of the same idea, but yet the one has the sign of the possessive ('s), which the other has not. As far as the possessive case (so called) is concerned, it is in most instances awkward to add any explanatory word to it; and the sentence runs much more smoothly if we use the preposition *of*; thus, 'I called at the shop of Smith the bookseller,' where both words are obviously in the objective.

1. Your *friend, him* whom you introduced to me yesterday, very soon departed.
2. Why do you treat *Mary Ann* so harshly, *she* who has always been so affectionate?
3. The *leader* was taken, *him* who defied the law.
4. I am going to see my *friends* in the country; *they* whom we met at the ferry.

Rule VII.—The Verb To Be.

The verb To Be has the same case after it as it has before it: thus, '*Alfred* was a good *king*.' Here the word *king*, coming after the verb *was*, is in the nominative, because it is descriptive of *Alfred*, the subject of the sentence. 'She, supposing *him* to be the *gardener*, saith unto him.' Here *gardener* is to be considered in the objective, because *him*, going before the verb *to be*, is in the objective, governed by the verb *supposing*.

It requires very little penetration to perceive that this seventh rule is included in the sixth, for the verb *to be* does nothing more, in such cases, than mark that the two nouns between which it is put are different names for the same thing. On this subject Mr Mill, in his Analysis, Vol. i. p. 117, reasons with his usual acuteness. In showing how the name of a class comes to be used for the name of an individual, he says, 'I have the name of the individual, *John*, and the name of the class, *man*; and I can set down my two names, *John*, *man*, in juxtaposition. But this is not sufficient to effect the communication I desire—namely, that the word *man* is a mark of the same idea of which *John* is a mark, and a mark of other ideas along with it; those, to wit, of which James, Thomas, &c. are marks. To complete my contrivance, I invent a mark which, placed between my marks *John* and *man*, fixes the idea I mean to convey, that *man* is another mark to that idea of which *John* is a mark, while it is a mark of other ideas, of which James, Thomas, &c. are marks. For this purpose, we use in English the mark *is*. By help of this, my object is immediately attained.'

Those capable of understanding this dissertation will immediately see the virtual identity of our sixth and seventh rules; but here, as in other cases, we have been anxious not to depart from the common doctrines; and the repetition of the rule, while it may be useful to some, can do harm to none.

1. You believed *it* to be *he*.
2. *It* was not *me* who said so.
3. *It* appeared to be *her* who carried on the business.
4. Though I was blamed, *it* could not have been *me*.

These we take to be the great leading principles on which the Syntax of the English language is founded, and by the thorough understanding of which, the student will be enabled to see the construction of almost any sentence. Many grammarians, some of whom—particularly Crombie and M'Culloch—we highly respect, have given many more; but we adhere to the decision of Dr Johnson, the dictator of English literature, who says, that 'our language has so little inflection or variety of terminations, that its construction neither requires nor admits many rules.'

A few miscellaneous remarks (we cannot dignify them with the name of rules) will conclude this part of our subject:—

1. Every adjective must qualify a noun, either expressed or understood: thus in the lines—

> '*Auspicious* Hope! in thy *sweet* garden grow
> Wreaths for *each* toil, a charm for *every* wo,'

every adjective is immediately followed by its noun. But in this,

> '*Few* shall part where *many* meet,'

the noun *men* is obviously understood.

We have already seen that *a* and *an* (commonly called the indefinite article) are identical in meaning; but there is this difference in their application, that *a* is prefixed to words beginning with the sound of a consonant, the long sound of *u*, and vowels sounding like *w*; and *an* to words which begin with the sound of a vowel. Thus we say, *a* man, but *an* ox; *a* house, but *an* hospital; *a* one-horse coach; *a* unicorn; *an* easterly wind, &c.

2. The exact import of the four words, *each*, *every*, *either*, and *neither*, which are known by the name of Distributive Adjectives, ought to be carefully attended to, and, from their very meaning, it will appear that they must always be joined to a noun in the singular.

Each means the one *and* the other of two: thus Cowper, in his ode, 'The Lily and the Rose,' says properly—

> 'Until a third [flower] surpass you both,
> Let *each* be deemed a queen.'

Every refers to any number more than two, considered individually: thus Byron, referring to the unfortunate separation of himself and Lady Byron, says—

> 'Both shall live, but *every* morrow
> Wake us from a widowed bed.'

Either means the one *or* the other of two; *neither*, not either, not the one *nor* the other of two. The use of both words is seen in these lines—

> ——'Lepidus flatters both,
> Of both is flattered; but he *neither* loves,
> Nor *either* cares for him.'—SHAKSPEARE.

Milton makes a wrong use of *either* in these lines—

> ——'She was cheered,
> But silently a gentle tear let fall
> From *either* eye.'

3. In English, as already noticed, the adjective is not generally inflected for any purpose except to express degrees of comparison; but to this remark there are two exceptions. These are the Demonstrative Adjectives *this* and *that*, which have corresponding plurals, *these* and *those*: thus we say, *this* man, but *these* men; *that* map, but *those* maps.

4. It is not the office of an adjective to qualify either a verb or another adjective; this must be done by an adverb. We do not say, 'James reads *good*,' but 'James reads *well*.' 'I am myself *indifferent* honest,' should be, 'I am myself *indifferently* honest.'

'In general, no quality, when considered in concrete, or as qualifying some particular subject, can itself be conceived as the subject of any other quality, though, when considered in abstract, it may. No adjective, therefore, can qualify any other adjective. A *great good man*, means a man who is both *great* and *good*. Both the adjectives qualify the substantive: they do not qualify one another.'—*Adam Smith*.

That this is the *genius* of our language, admits not of reasonable doubt; but there are several exceptions. We speak of a thing as being of a *florid red* colour, and of iron as being *red hot*. We say, '*a great many* were present;' 'the doors were *wide open*;' Byron speaks of the '*pale blue* sky;' in all which cases it is quite clear that the first adjective in some degree modifies the second. Whether this idiom is capable of being *metaphysically* defended against the reasoning of Smith, or whether such expressions are to be regarded as, to use the words of Johnson, 'spots impressed so deep in the English language, that criticism can never wash them away,' is a question into the discussion of which we shall not enter. About the *authority* of the expressions there can be no dispute.

It was already pointed out that certain adjectives, from their very nature, do not admit of comparison; and it should now be observed that, for the same reason, many of them, such as *universal*, *omnipotent*, and others, whose signification cannot be increased, ought not to be qualified by any adverb.

5. Tautological expressions ought to be avoided, and no word should be introduced into a sentence which has not some distinct function to perform.

'From whence came he?' should be, 'Whence came he?' because, as we already saw, *whence*, in itself, means '*from* what place.' Again, in the sentence, 'I doubt not but that he will come,' it is obvious, on a little reflection, that the idea intended would be completely conveyed by this form of expression—'I doubt not that he will come,' and the insertion of *but* serves no useful purpose. By reversing the sentence, this may be more obvious—'He will come, I doubt not that (*thing*).'

In this sentence, taken from Goldsmith's 'History of England'—'The New Englanders were determined to attack the royal forces as soon as *ever* they should march out of Boston'—the word *ever* is of no use, and consequently should be omitted.

Perhaps under the same remark might be included the following, which, however, from its extensive application, we shall keep separate.

6. Two negatives ought not to be used, unless affirmation is meant.

In this respect Bacon, Shakspeare, and Locke, and indeed all our early writers, frequently offend. Usage was in their times divided; but it has now become fixed, and that on the side of metaphysical propriety.

Bacon says—'The joys of parents are secret, and so are their griefs and fears; they cannot utter the one, *nor* will they *not* utter the other.' Shakspeare says—

> 'Be *not* too tame *neither*.'

And again,

> '*Nor* do *not* saw the air too much.'

Goldsmith, too, has violated the idiom of the English tongue in this respect, although he has offended in good company: 'Never was a fleet more completely equipped, *nor never* had the nation more sanguine hopes of success.' *Never* should be *ever*. 'He is *not unjust*' is right, if we mean to express much the same idea as is conveyed by the words, 'He is just.' By some it is maintained that this mode of expression strengthens the affirmation, and certainly it may do so in spoken language; but in writing, it serves only to introduce ambiguity, and so ought to be avoided.

7. Certain conjunctions go in pairs: thus—both, and; either, or; neither, nor; though *or* although, yet; whether, or; so, that; not only *or* not merely, but also; so, as; as, as; such, as. Most of these words are conjunctions, but not all.

'I will *neither* come *or* send' is wrong; because *or* is not the correlative of neither: it ought to be, 'I will *either* come *or* send,' or, 'I will *neither* come *nor* send.'

8. Derivative words generally take the same prepositions after them as their primitives.

Goldsmith offends again in saying, 'Catiline was insatiable *of* wealth;' because we do not say to satiate

(the primitive of insatiable) a person *of* wealth, but *with* wealth.

9. Certain prepositions are appropriated to certain words and phrases.

We do not say, 'To have faith *to* a person,' but '*in* a person;' 'To find difficulty *with* doing a thing,' but '*in* doing it;' 'To differ *with* a person,' but '*from* a person.'

Such idiomatic expressions are only to be made familiar by an extensive and well-directed course of study; or, as Milton has it, 'by a well-continued and judicious conversing among pure authors.'

10. After the comparative degree, whether of adjectives or adverbs, and the adjective *other*, the conjunction *than* is used: thus, '*Better* is a little with righteousness, *than* great revenues without right;' 'This is none *other than* the house of God.' Shakspeare has offended against this idiom—

> 'The sun no *sooner* shall the mountains touch,
> *But* we will ship him hence.'

But ought to be *than*. 'Scarcely had Austria been crushed, *than* it was announced,' &c.—GOLDSMITH. *Than* ought to be *when*.

11. The Perfect Participle, and not the Past Tense, is used after the verbs *have* and *be*.

This remark requires to be attended to in using irregular verbs, but in verbs that are regular, no mistake can arise, as both parts are the same. In nothing, we venture to remark, does defective scholarship sooner betray itself than in a wrong conjugation of the irregular verbs.

'They *had* from the beginning *began* to embrace opposite systems.'—GOLDSMITH. *Began* ought to be *begun*.

> 'You must not think
> That we are made of stuff so flat and dull,
> That we can let our beard *be shook* with danger.'
> —SHAKSPEARE.

Shook should be *shaken*.

12. Adverbs ought to be placed so as to leave no doubt what word is affected by them.

'The negroes are to appear at church *only* in boots.' By this position of *only*, it appears that the negroes were not to come to church unless 'in boots,' or with nothing else but boots; but the meaning intended was, that they should appear at church, and nowhere else, in boots. The sentence should therefore have stood thus:—'The negroes are to appear only at church in boots.' 'Pompey played a despicable part *enough* betwixt them.' *Enough* ought to be immediately after *despicable*. 'Cæsar so turned the fate of the day, that the barbarians were *almost* cut off to a man.' It ought to be, 'were cut off *almost* to a man.'

EXERCISES.

To all these remarks we shall subjoin a few miscellaneous examples, on which the student may exercise himself. We shall refer to the Rule or Remark violated as we go on.

1. Are either of us to blame? (Rule I. Remark 2.)
2. Those kind of things give most satisfaction. (Rule I. Remark 3.)
3. I acted in compliance to his request. (Remarks 8 and 9.)
4. Let such teach others who themselves excel.—POPE. (Remark 7.)
5. These new divines offered salvation upon easier terms, by substituting practice to belief, and a man's own efforts to vicarious satisfaction.—AIKEN'S *Letters*. (Remark 9.)
6. There is nothing more pleases us as to have our performances praised. (Remark 10.)
7. Antony led the way direct to Italy. (Remark 4.)
8. Neither of them appealed to impotent laws which could afford them no protection.—ROBERTSON. (Rule IV. Remark 2.)
9. It is wonderful how preposterous the affairs of this world are managed.—FRANKLIN. (Remark 4.)
10. During the rest of his consular year, Bibulus could only escape outrage by not only avoiding all assemblies of the people, but every solemn and important meeting of the senate.—*History of Rome, Cabinet Cyclopædia*. (Remark 12.)
11. I never did repent for doing good,
    Nor shall not now.—SHAKSPEARE. (Remarks 6 and 8.)
12. The wisest princes need not think it any diminution to their greatness, or derogation to their sufficiency, to rely upon counsel.—BACON'S *Essays*. (Remark 9.)
13. The hostilities which twice interrupted the progress of the community, neither seemed to originate in any imperative claim of national honour or advantage.—WADE'S *British History*. (Remarks 12 and 7.)
14. It was observed to me, that in this country no man who is able to work need go supperless to bed. This far he stated the fact.—COMBE'S *Notes on America*. (Rule V. Remark 4.)
15. When a nation forms a government, it is not wisdom, but power, which they place in the hands of the magistrate.—ROBERT HALL. (Rule IV.)
16. The leaders of the fleet and the army began mutually to accuse each other.—GOLDSMITH. (Remark 5.)
17. Royal proclamations continued as omnipotent as in the preceding reign.—WADE.
18. There have been three riots in England of late, each of which have been levelled against dissenters.—ROBERT HALL. (Remark 2.)

The student should now be so familiar with the *Rules of Syntax*, which are nothing but generalised facts regarding the customary modes of uniting words and sentences together, that he will be able to commit his thoughts to appropriate language; that is, such as shall convey to others the exact meaning he has in his own mind. To do this, however, not merely with accuracy, but also taste, besides attending to the rules of syntax, he must take care, first, that all the words he uses belong to the English tongue; and secondly, that they be employed in their usual and recognised acceptation.

A word *not English* is termed a *barbarism*, and when used in a sense different from its established one, an *impropriety*; both should be equally avoided, either in writing or speaking.

PUNCTUATION.

Punctuation, or the insertion of *points* in written language, is usually considered a part of grammar, and a knowledge of its principles is desirable for correct literary composition. The introduction of points is said to be useful to mark places at which a pause of a lesser or greater length should be made in reading. This definition is not altogether wrong, but punctuation has much higher objects in view. Points are necessary for marking the parts or sections into which sentences and paragraphs are divided, so that the exact meaning or sense may be apprehended, and perfect regularity preserved. The real use of points, therefore, is to cut off and separate single words, or groups of words, from each other. Sometimes the separation need only be slight, and for this the point called the *comma* (,) is sufficient. For instance, 'Providence has, I think, displayed a tenderness for mankind.' Here there is a comma before and after 'I think,' because these two words express something thrust into the sentence, which should be kept in some measure distinct. The *semicolon* (;) is used to mark a more perfect separation of words. In general, it cuts a sentence into two or more parts, one of which has a reference to the other. Thus, 'Economy is no disgrace; for it is better to live on a little than to outlive a great deal.' Here the sentence is in two sections, the semicolon marking the boundary of separation. The *colon* (:) signifies a still wider separation in the words of a sentence; but its qualifications are so indistinct, and so liable to misconception, that in practice it is now almost entirely disused, and the *period* or full stop (.) is employed in its stead.

The other marks used in written language are as follows:—The *mark of interrogation* (?), which is put after words asking a question; the *mark of admiration* (!), put after any exclamation of surprise, lamentation, or scorn; the *dash* (—), which is sometimes employed instead of a semicolon, or for any kindred purpose; and the *parenthesis* ( ), for enclosing a word or portion of a sentence foreign to the tenor of the

sense. Good writers endeavour to avoid requiring either parenthetic marks or dashes, both of which indicate irregularities of thought and expression.

CONCLUSION.

We have now explained the Etymology and Syntax of the English tongue, as far as our limits permit; and in drawing to a close, we may be allowed to impress on our readers the value of the science which we have been endeavouring to expound. If they have intelligently gone along with us in our various remarks, they will not be surprised when we assert that this department of human knowledge, if skilfully cultivated, will be productive of very valuable results. To understand the grammar of a sentence, is nothing more or less than to understand its sense, and to see clearly how its various parts are connected; while in learning to recognise the different modifications that words undergo, and the different arrangements of which they are susceptible, to express difference of thought, we have exercised many of the mental faculties, and in so far laid the foundation of what is much wanted—a just system of Logic.

The sources whence the student will derive effectual aid in the prosecution of this interesting subject, we have already pointed out incidentally; but let no one lament too much though he should not have access to them. Rather let him, by additional thought on his own part, make up for the deficiency, and he may rest assured that, by accustoming himself to mark the different modes of expression he meets with in reputable authors, *a system of grammar will evolve itself*, which will be all the more valued—if we may not say valuable—that it has been wrought out by his own exertions, and not received by tradition or passively from the hands of another. Following this plan, the real method of induction, he will either reproduce the rules which we have set before him, or else see their erroneousness. So that, in either case, we shall deserve well of him; for, if we are right in anything, we shall have served as a guide to him; and in those points where we have erred, we shall have put him on the way to find out our errors. We know very well that the pupil cannot see with our eyes, and we have therefore only endeavoured to direct his attention to such objects as he may see with his own. So far as he sees, he should believe, and no farther. To dogmatise is the method of a grammatist, but our ambition has been to act the part of a philosophical grammarian, and, as such, we cannot conclude without warning our readers never to forget that words in themselves are nothing, and that they are only valuable in so far as they are the symbols of ideas. Beautifully and justly has Johnson said, 'Words are the daughters of earth, and things only are the sons of heaven.' Language is but a vehicle of thought, or, at best, its instrument, and to view it as an 'end unto itself,' is the vain humour of a pedant. Let none be so taken up with words as to forget solid things.

COMMON ERRORS CORRECTED.

The remaining space of the present sheet could scarcely, we think, be better employed than in enumerating some examples of the most common errors in the pronunciation and selection of words. In every part of the country there are some peculiar vices of speech, which have been handed down from one generation to another, and are generally so inveterate in most minds, from the effect of early habit, that no cultivation which the mind may receive in mature life altogether obliterates them. For any one who has occasion to mix in refined society to be thus liable every moment to the use of some barbarism of speech, is a misfortune of some magnitude; for nothing tends so much to convey a mean impression of his education and habits of life. The most beautiful young female, who, silent, appears a kind of divinity, is reduced at once to common earth when we hear a few inelegant words fall from her mouth. Coleridge somewhere tells that he was once much prepossessed in favour of an individual whom he met at a dinner-table, and who appeared a dignified and respectable person, until, some kind of fruit being introduced, he heard him exclaim, 'Oh, them's the jockies for me!' Words are the exponents of conditions of mind, and when mean ones are used, we unavoidably suppose the condition of mind to be mean.

ERRORS IN PRONUNCIATION.

The interchange of *w* for *v*, and *v* for *w*, and the putting of the sound of *h* before words where it is inappropriate, and taking it away where it ought to be. *Examples*—*V*ill you *w*alt to get some *v*ine and *w*ictuals! An 'ard-boiled *h*egg.

The sound *k* instead of *g* at the ends of words. *Examples*—Somethin*k*, nothin*k*.

The addition of *r* at the ends of words ending in vowels. *Examples*—Idea*r*, windo*r*, Elisa*r*.

Changing the termination *en*, *ain*, or *eign*, into *ing*; as gard*ing* for garden, fount*ing* for fountain, sover*ing* for sovereign, and the like.

UNGRAMMATICAL FORMS.

Between you and *I*, there is a great want of conscientiousness in most partisans. *Correction*—Between you and me, &c.

I am not so proud as *him*. *Cor.*—As he.

You will do it better than *her*. *Cor.*—Than she.

May thou as well as me be meek, patient, and forgiving. *Cor.*—As well as I, &c.

While the house *was being* built. *Cor.*—While the house was in the course of being built.

He *don't* go to town to-day. *Cor.*—He does not go to town to-day.

I *rather think* he is out of town. *Cor.*—I believe he is out of town.

I *had better* go myself. *Cor.*—It were better that I should go myself.

I *had oblige* to go. *Cor.*—I was obliged to go.

John is tall in comparison *to* James. *Cor.*—John is tall in comparison with James.

He is a *very rising* man. *Cor.*—He is rising very rapidly.

She *readied* a dish for us. *Cor.*—She cooked, or prepared, a dish for us.

She was a *superior* woman, or, She was a *most superior* woman. *Cor.*—Superior can only be used with regard to something else which is at the same time expressed: thus, She was a woman much superior to the generality of her sex.

This is better *nor* that. *Cor.*—This is better than that.

Short-lived, long-lived. *Cor.*—Short-lifed, long-lifed.

The *then* Earl of Winchelsea; the *then* Mrs Bennet. *Cor.*—The Earl of Winchelsea of that time; the Mrs Bennet then living.

He *lays* asleep in the cabin. *Cor.*—He lies asleep in the cabin.

His health was *drank*. *Cor.*—His health was drunk.

The dinner was all *eat* up. *Cor.*—The dinner was all eaten up.

I went to table and *eat* very heartily. *Cor.*—I went to table and ate very heartily.

A *couple of shillings*. *Cor.*—Couple can only be properly applied to objects in connection; as, a married couple, a couple of pointers.

John, James, and Robert, were sober workmen, the *latter* particularly so. *Cor.*—The last particularly so (the objects enumerated being more than two).

Ask *at* him. *Cor.*—Ask him.

The 'Manchester Guardian' is a *well-advertised* paper—meaning a paper which usually contains many advertisements. *Cor.*—The 'Manchester Guardian' usually contains many advertisements, or—enjoys a large share of the patronage of advertisers.

I could not give him credit, *without* he changes his

behaviour. *Cor.*—I could not give him credit, unless he changes his behaviour.

I will go, *except* I should be ill. *Cor.*—Unless I should be ill.

I saw them all, *unless* two or three. *Cor.*—I saw them all, except two or three.

I took some cream *into* a bowl. *Cor.*—I took some cream in a bowl.

I am going *for* to do it. *Cor.*—I am going to do it.

He was a devoted *antiquarian* all his days. *Cor.*—He was a devoted antiquary all his days. (*Antiquarian* is the adjective.)

James is going to be a *medical* man. *Cor.*—James is going to be a physician, surgeon, or medical practitioner.

He is *oftener* wrong than right. *Cor.*—He is more frequently wrong than right.

I have *no right* to pay this tax. I have *no right* to be distressed by that man's conduct. *Cor.*—I am under no obligation to pay this tax. I am not obliged to suffer from that man's conduct.

You will be *necessitated* to submit. *Cor.*—You will be obliged to submit.

He is *not intending* to purchase it. *Cor.*—He does not intend to purchase it.

Don't talk of *those* sort of things to me. *Cor.*—Don't talk of that sort of things to me. *Sort of things* is a mean and objectionable expression. 'Things of that kind' is more elegant, as well as correct.

The castle is seated *by* the Garonne. *Cor.*—The castle is seated beside the Garonne.

Lord Byron was born *at* London. There have been destructive fires *at* Edinburgh. *Cor.*—Lord Byron was born in London. There have been destructive fires in Edinburgh. (*At* is only proper with respect to a small town.)

I met him *on* the street. *Cor.*—I met him in the street.

I don't know, but I will inquire *at* my friend. *Cor.*—Of my friend.

I *was calling for* you yesterday. *Cor.*—On you yesterday.

Oh, I *will* fall, and nobody *shall* help me. *Cor.*—Oh, I shall fall, and nobody will help me.

I have been *to* London, and am now going *for* Liverpool. *Cor.*—I have been in London, and am now going to Liverpool.

He was married *on* Miss Edmonstone. *Cor.*—He was married to Miss Edmonstone.

They were some distance from home when the accident happened. *Cor.*—At some distance, &c.

He lives opposite the Royal Exchange. *Cor.*—Opposite to, &c.

Pray, sit *into* the fire. *Cor.*—Pray, sit near the fire.

The performance was approved *of* by all who understood it. *Cor.*—The performance was approved by all.

They attacked Northumberland's house, whom they put to death. *Cor.*—They attacked the house of Northumberland (or the Duke of Northumberland), whom they put to death.

It is true what he says, but it is not applicable to the point. *Cor.*—What he says is true, &c.

Together with the national debt, the greatest national advantages are *also* transmitted to succeeding generations. *Cor.*—*Also* is superfluous.

Failing in his effort, he *again* repeated it. *Cor.*—*Again* is superfluous.

He is *noway* thy inferior, and in this instance is *noways* to blame. *Cor.*—He is in nowise thy inferior, and in this instance is not at all to blame.

It is *neither more nor less than* medicine in disguise. *Cor.*—It is simply medicine in disguise.

The master never *challenged* him for stealing. *Cor.*—The master never reproved him for stealing.

He charged me with want of resolution, in which he was greatly mistaken. *Cor.*—He charged me with want of resolution, but in this censure he was greatly mistaken.

He gave her a beautiful book *in* a present. *Cor.*—He gave her a beautiful book *as* a present: (or better) He presented her with, or made her a present of, a beautiful book.

No *less* than two hundred scholars have been educated in that school. *Cor.*—No fewer, &c.

There was a *quantity* of people present. *Cor.*—There was a number of people present.

It is above a year since the time that I left school. *Cor.*—It is more than a year since I left school.

He felt the *peculiarness* of his situation. *Cor.*—He felt the peculiarity of his situation. In like manner *delicacy* should be preferred to *delicateness*, *incapability* to *incapableness*, &c.

He was guilty of such atrocious conduct, that he was deserted by his friends for good and all. *Cor.*—He was guilty of conduct so atrocious, that he was entirely deserted by his friends.

OBSOLETE, AWKWARD, AND MEAN FORMS.

I had *as lief* do it myself as persuade another to do it. *Cor.*—I would as readily, &c.

He convinced his opponent by *sheer dint* of argument. *Cor.*—Entirely by force of argument.

He is *not a whit* better than those whom he so liberally condemns. *Cor.*—He is not in any degree, &c.

He *stands upon the bond*, and will not abate *a jot* of his claim. *Cor.*—He insists on the strict terms of the bond, and will not in the least abate his claim.

Good satin, *I take it*, is considerably superior to common silk. *Cor.*—I presume, &c.

You have no *call* to do it. *Cor.*—You have no occasion to do it.

I have no *right* to pay. *Cor.*—I am not bound to pay.

Politics too often *sets men by the ears*. When they *come to words*, and *fall out*, reason is generally lost sight of. I should not wonder but on this occasion there might be *broken heads going*. *Cor.*—Politics too often cause quarrels. When men enter into controversy, and differ violently, reason is generally lost sight of. I should not wonder but on this occasion they might commit some violence on each other.

We shall have a *regular break-up* in the ministry. *Cor.*—We shall have a dissolution of the ministry.

He was very dexterous in *smelling out* the designs of his neighbours. *Cor.*—In penetrating, &c.

He is a *thorough-paced* knave. *Cor.*—He is a great knave.

Heretofore Hannibal had carried all before him; *wherefore* he had become very proud, listening to no advice *whatsoever*; *whereas* Scipio invariably took counsel from the most sagacious of his officers.—The words in *Italics* are all obsolete and objectionable.

He *wist* not what to do. *Cor.*—He knew not what to do.

He little *wots* of the storm that is brewing. *Cor.*—He is not aware, &c.

Topsy-turvy, *pell-mell*, *hurly-burly*, having a *month's mind* for a thing, *currying favour* with a person, *dancing attendance* on customers, *get into a scrape*, *come to the scratch*, *flare up*, *fork out*, *walk into him*, *kick up a row*, *raise a rumpus*, and the like—All objectionable from their meanness.

We are *at one* on the slave question.

I happen to have a little leisure *upon my hands*.

He might have perceived it with *half an eye*.

My father *left* this morning by the mail. *Cor.*—My father went away this morning, &c. 'When are you to *leave?*' is in like manner vicious. The place or thing left should always be stated.

Slang phrases of all kinds should be received warily. The least objectionable are those which merely suggest comical ideas; those which tend to present light and jocular views of moral error are particularly detestable. It will be the aim of a well-bred and judicious person to make his discourse neither too nice and formal, nor too loose and homely, but, as far as possible, to preserve a medium between the select language employed in literature, and the familiar, and perhaps temporary, phraseology which prevails in ordinary society.

ARITHMETIC—ALGEBRA.

In the present and succeeding sheet, an attempt is made to convey to the comparatively unlearned mind some knowledge of Mathematical science, both as regards measurement by numbers (ARITHMETIC) and measurement of dimensions (GEOMETRY). The sketch we offer of each is necessarily brief and imperfect; but our end will be gained if we afford that amount of information on the subject which is generally possessed by persons of moderately well-cultivated intellect.

A recognition of the value of *numbers* is coeval with the dawn of mental cultivation in every community; but considerable progress must be made before methods of reckoning are reduced to a regular system, and a notation adopted to express large or complex quantities. An inability to reckon beyond a few numbers is always a proof of mental obscurity; and in this state various savage nations have been discovered by travellers. Some are found to be able to count as far as five, the digits of the hand most likely familiarising them with that number; but any further quantity is either said to consist of so many fives, or is expressed by the more convenient phrase, 'a great many.' Among the North American Indians, any great number which the mind is incapable of distinctly recognising and naming is figuratively described by comparing it to the leaves of the forest; and in the same manner the untutored Negro of Africa would define any quantity of vast amount by pointing to a handful of sand of the desert.

On the first advance of any early people towards civilisation, it would be found impossible to give a separate name to each separate number which they had occasion to describe. It would therefore be necessary to consider large numbers as only multiplications of certain smaller ones, and to name them accordingly. This is no doubt what gave rise to classes of numbers, which are different in different countries. For instance, the Chinese count by *twos;* the ancient Mexicans reckoned by *fours*. Some counted by *fives*, a number which the fingers would always be ready to suggest. The Hebrews, from an early period, reckoned by *tens*, which would also be an obvious mode, from the number of the fingers of the two hands, as well as of the toes of the two feet. The Greeks adopted this method; from the Greeks it came to the Romans, and by them was spread over a large part of the world.

NOTATION.

Notation is the method of expressing numbers by means of certain *signs* or figures. The representation of numbers by written signs is an art generally believed to have taken its rise after the formation of alphabets. One of the earliest sets of written signs of numbers of which we have any notice, is certainly the series of letters of the Hebrew alphabet which was used by that people—Aleph, beth, gimel, daleth, he, vau, zain, cheth, teth, standing respectively for the numbers one, two, three, four, five, six, seven, eight, nine. The Greeks directly adopted this plan from the Hebrews, forming their numbers thus:—1 alpha, 2 beta, 3 gamma, 4 delta, 5 epsilon—here, having no letter corresponding with the Hebrew *vau*, they put in the words *στιγμον βαυ* to denote six; after which they proceeded with 7 zeta, 8 eta, &c. Before adopting this plan, they had indicated one by iota ι, probably because it was the smallest of their letters; five by Π (P), being the first letter of *pente*, five; ten by Δ (D), being the initial of *deka*, ten. After having for some time adopted the Hebrew mode, they divided their alphabet into three classes: the first ten letters expressing the numbers from one to ten; while twenty, thirty, forty, and so on up to a hundred, were signified by the next *nine*, ninety being expressed by a figure formed on purpose, and resembling the Arabic 5 inverted. The remaining seven letters expressed respectively 200, 300, 400, 500, 600, 700, 800; and for 900 there was another inverted figure. Larger numbers were represented by letters accented in various ways.

The Romans, from an early period, had a method of expressing numbers, which seems to have been at first independent of the alphabet. The following intelligible account of it has been given by Professor Playfair:—'To denote one, a simple upright stroke was assumed |; and the repetition of this expressed two, three, &c. Two cross strokes X marked the next step in the scale of numeration, or ten; and that symbol was repeated to signify twenty, thirty, &c. Three strokes, or an open square C, were employed to denote the hundred, or the third stage of numeration; and four interwoven strokes M, sometimes incurved ↀ, or even divided CIↃ, expressed a thousand. Such are all the characters absolutely required in a very limited system of numeration. The necessary repetition of them, however, as often occasionally as nine times, was soon found to be tedious and perplexing. Reduced or curtailed marks were therefore employed to express the intermediate multiples of five; and this improvement must have taken place at a very early period. Thus five itself was denoted by the upper half V, and sometimes the under half Λ, of the character X for ten; L, or the half of C, the mark for a hundred, came to represent fifty; and the incurved symbol ↀ, or CIↃ, for a thousand, was split into IↃ, to express five hundred.

These important contractions having been adopted, another convenient abbreviation was introduced. To avoid the frequent repetition of a mark, it was prefixed to the principal character, and denoted the effect by counting backwards. Thus instead of four strokes, it seemed preferable to write IV; for eight and nine the symbols were IIX and IX; and ninety was expressed by XC. This mode of reckoning by the defect was peculiar to the Romans, and has evidently affected the composition of their numerical terms. Instead of *octodecem* [eight and ten—for eighteen], and *novemdecem* [nine and ten—for nineteen], it was held more elegant, in the Latin language, to use *undeviginti* [one from twenty], and *duodeviginti* [two from twenty].

But the alphabetic characters now lent their aid to numeration. The uniform broad strokes were dismissed, and those letters which most resembled the several combinations were adopted in their place. The marks for one, five, ten, and fifty, were respectively supplied by the letters I, V, X, and L. The symbol for a hundred was aptly denoted by C, which had originally a square shape, and happened, besides, to be the initial of the very word *centum*. The letter D was very generally assumed as a near approximation to the symbol for five hundred; and M not only represented the angular character for a thousand, but was likewise, though perhaps accidentally, the first letter of the word *mille*.'—*Edin. Rev.* No. xviii. p. 193.

The Hebrew, improved Grecian, and Roman numerals were perhaps sufficient to express any single number with tolerable precision; but it is easy to see that they must have been nearly unfitted for use in the processes of arithmetic. The Greeks certainly contrived to overcome many obstacles in the business of calculation, and even could express fractions—though, from a practice of adding from left to right, and ignorance of the plan of *carrying* tens to the higher places, their problems were at all times awkward and complicated. The Romans, however, careless of old inconveniences, were still more awkwardly situated than

the Greeks. Let any reader just suppose, for instance, even so simple a question as the amount of XLVIII added to XXXIV! It is evident that placing the figures below each other, as we do with the Arabic numerals, would serve little to facilitate such a calculation. In fact, the Romans were obliged, where mental calculation would not serve, to resort to a mechanical process for performing problems in arithmetic. A box of pebbles called *loculus*, and a board called *abacus*, constituted their means of calculation; and of these every schoolboy, and many other persons, possessed a set. The word calculation claims no higher descent than from *calculus*, a stone or pebble. The board was divided from the right to the left hand by upright columns, on which the pebbles were placed, to denote units, tens, hundreds, thousands, &c. The labour of counting and arranging the pebbles was afterwards sensibly abridged by drawing across the board a horizontal line, above which each single pebble had the power of five. In the progress of luxury, *tali*, or dies made of ivory, were used instead of pebbles; and afterwards the whole system was made more convenient by substituting beads strung on parallel threads, or pegs stuck along grooves; methods of calculation still used in Russia and China, and found convenient in certain departments of Roman Catholic devotion, and in several familiar games in more civilised countries. With such instruments, problems in addition and subtraction would not be very difficult; but those in multiplication and division, not to speak of the more compound rules, must have been extremely tedious and irksome. So disagreeable, indeed, was the whole labour, that the Romans generally left it to slaves and professional calculators.

The numerals now in use, with the mode of causing them by peculiar situation to express any number, and whereby the processes of arithmetic have been rendered so highly convenient, have heretofore been supposed to be of Indian origin, transmitted through the Persians to the Arabs, and by them introduced into Europe in the tenth century, when the Moors invaded and became masters of Spain. Such, in reality, appears to have been in a great measure the true history of the transmission of these numerals; but as it has been lately found that the ancient hieroglyphical inscriptions of Egypt contain several of them, learned men are now agreed that they originated in that early seat of knowledge, between which and India there exist more points of resemblance, and more traces of intercourse, than is generally supposed. In the eleventh century, Gerbert, a Benedictine monk of Fleury, and who afterwards ascended the papal throne under the designation of Sylvester II., travelled into Spain, and studied for several years the sciences there cultivated by the Moors. Among other acquisitions, he gained from that singular people a knowledge of what are now called the *Arabic numerals*, and of the mode of arithmetic founded on them, which he forthwith disclosed to the Christian world, by whom at first his learning caused him to be accused of an alliance with evil spirits. The knowledge of this new arithmetic was about the same time extended, in consequence of the intercourse which the Crusaders opened between Europe and the East. For a long time, however, it made a very slow and obscure progress. The characters themselves appear to have been long considered in Europe as dark and mysterious. Deriving their whole efficacy from the use made of the cipher, so called from the Arabic word *tsaphara*, denoting *empty* or *void*, this term came afterwards to express, in general, any secret mark. Hence in more troublous times than the present, a mode of writing was practised, by means of marks previously concerted, and called *writing in cipher*. The Arabic characters occur in some arithmetical tracts composed in England during the thirteenth and fourteenth centuries, particularly in a work by John of Halifax, or De Sacrobosco; but another century elapsed before they were generally adopted. They do not appear to have settled into their present forms till about the time of the invention of printing.

It would be impossible to calculate, even by their own transcendent powers, the service which the Arabic numerals have rendered to mankind.

NUMERATION.

Numeration is the art of *numbering*—that is, of expressing any number in words. The Arabic numerical signs now generally in use take the following well-known forms:—1, 2, 3, 4, 5, 6, 7, 8, 9, 0. The first nine of these, called *digits* or digital numbers, represent, each, one of the numbers between *one* and *nine*, and when thus employed to represent single numbers, they are considered as *units*. The last (0), called a *nought*, nothing, or cipher, is, in reality, taken by itself, expressive of an absence of number, or nothing; but, in connection with other numbers, it becomes expressive of number in a very remarkable manner.

The valuable peculiarity of the Arabic notation is the enlargement and variety of values which can be given to the figures by associating them. The number ten is expressed by the 1 and 0 put together—thus 10; and all the numbers from this up to a hundred can be expressed in like manner by the association of two figures—thus, twenty, 20; thirty, 30; eighty-five, 85; ninety-nine, 99. These are called decimal numbers, from *decem*, Latin for ten. The numbers between a hundred and nine hundred and ninety-nine inclusive, are in like manner expressed by three figures—thus, a hundred, 100; five hundred, 500; eight hundred and eighty-five, 885; nine hundred and ninety-nine, 999. Four figures express thousands; five, tens of thousands; six, hundreds of thousands; seven, millions; and so forth. Each figure, in short, put to the left hand of another, or of several others, multiplies that one or more numbers by ten. Or if to any set of figures a nought (0) be added towards the right hand, that addition multiplies the number by ten; thus 999, with 0 added, becomes 9990, nine thousand nine hundred and ninety. Thus it will be seen that, in notation, the *rank* or place of any figure in a number is what determines the value which it bears. The figure third from the right hand is always one of the hundreds; that which stands seventh always expresses millions; and so on. And whenever a new figure is added towards the right, each of the former set is made to express ten times its former value. A large number is thus expressed in the Arabic numerals, every set of three from the right to the left hand being separated by a comma for the sake of distinctness.

1,	2	3	4,	5	6	7,	8	9	0
Thousands of millions.	Hundreds of millions.	Tens of millions.	Millions.	Hundreds of thousands.	Tens of thousands.	Thousands.	Hundreds.	Tens.	Units.

The above number is therefore one thousand two hundred and thirty-four millions, five hundred and sixty-seven thousands, eight hundred and ninety. Higher numbers are expressed differently in France and England. In the former country, the tenth figure expresses billions, from which there is an advance to tens of billions, hundreds of billions, trillions, &c. In our country, the eleventh figure expresses ten thousands of millions, the next hundreds of thousands of millions, the next billions, &c. The two methods will be clearly apprehended from the following arrangement:—

ENGLISH.	FRENCH.
Units.	Units.
Tens.	Tens.
Hundreds.	Hundreds.
Thousands.	Thousands.
Tens of thousands.	Tens of thousands.
Hundreds of thousands.	Hundreds of thousands.
Millions.	Millions.
Tens of millions.	Tens of millions.
Hundreds of millions.	Hundreds of millions.
Thousands of millions.	Billions.
Ten thousands of millions.	Tens of billions.
Hundreds of thousands of millions.	Hundreds of billions.
Billions.	Trillions.
Tens of billions.	Tens of trillions.
Hundreds of billions.	Hundreds of trillions, &c.

For practice in Notation and Numeration, the reader should write down large numbers alternately in words and figures; at first assisting himself by the use of commas, but gradually dispensing with these as he acquires facility and certainty of expression.

SIMPLE OR ABSTRACT NUMBERS.

There are four elementary departments in arithmetic—Addition, Multiplication, Subtraction, and Division.

Addition.

Addition is the adding or summing up of several numbers, for the purpose of finding their united amount. We add numbers together when we say, 1 and 1 make 2; 2 and 2 make 4; and so on. The method of writing numbers in Addition, is to place the figures under one another, so that units will stand under units, tens under tens, hundreds under hundreds, &c. Suppose we wish to add together the following numbers—27, 5, 536, 352, and 275; we range them in columns one under the other, as in the margin, and draw a line under the whole. Beginning at the lowest figure of the right-hand column, we say 5 and 2 are 7—7 and 6 are 13—13 and 5 are 18—18 and 7 are 25; that is, 2 tens and 5 units. We now write the 5 below the line of units, and *carry* or add the 2 tens, or 20, to the lowest figure of the next column. In carrying this 20, we let the cipher go, it being implied by the position or rank of the first figure, and take only the 2; we therefore proceed thus—2 and 7 are 9—9 and 5 are 14—14 and 3 are 17—17 and 2 are 19. Writing down the 9, we proceed with the third column, carrying 1, thus—1 and 2 are 3—3 and 3 are 6—6 and 5 are 11. No more figures remaining to be added, both these figures are now put down, and the amount or sum of them all is found to be 1195. Following this plan, any quantity of numbers may be summed up. Should the amount of any column be in three figures, still, only the last or right-hand figure is to be put down, and the other two carried to the next column. For example, if the amount of a column be 127, put down the 7 and carry the other two figures, which are 12; if it be 234, put down the 4 and carry 23.

```
  27
   5
 536
 352
 275
----
1195
```

For the sake of brevity, in literature, addition is often denoted by the figure of a cross, of this shape +. Thus, 7 + 6 means 7 added to 6; and in order to express the sum resulting, the sign =, which means *equal to*, is employed, as 7 + 6 = 13; that is, 7 and 6 are equal to 13. Again, 8 + 5 + 9 = 22.

Multiplication.

Multiplication is a short method of addition under certain circumstances. If we wish to ascertain the amount of twelve times the number 57, instead of setting down twelve rows of 57, and adding them together, we adopt a shorter plan, by which we come to the same conclusion. For ascertaining the amount of all simple numbers as far as 12 times 12, young persons commit to memory the following Multiplication Table, a knowledge of which is of great value, and saves much trouble in after life:—

1	2	3	4	5	6	7	8	9	10	11	12
2	4	6	8	10	12	14	16	18	20	22	24
3	6	9	12	15	18	21	24	27	30	33	36
4	8	12	16	20	24	28	32	36	40	44	48
5	10	15	20	25	30	35	40	45	50	55	60
6	12	18	24	30	36	42	48	54	60	66	72
7	14	21	28	35	42	49	56	63	70	77	84
8	16	24	32	40	48	56	64	72	80	88	96
9	18	27	36	45	54	63	72	81	90	99	108
10	20	30	40	50	60	70	80	90	100	110	120
11	22	33	44	55	66	77	88	99	110	121	132
12	24	36	48	60	72	84	96	108	120	132	144

This table is so well known, that it is almost superfluous to explain that, when any number in the top row is multiplied by any number in the left-hand side row, the amount is found in the compartment or square beneath the one and opposite the other. Thus, 2 times 2 are 4; 5 times 6 are 30; 12 times 12 are 144.

The multiplying of numbers beyond 12 times 12 is usually effected by a process of calculation in written figures. The rule is to write down the number to be multiplied, called the *multiplicand*; then place under it, on the right-hand side, the number which is to be the *multiplier*, and draw a line under them. For example, to find the amount of 9 times 27, we set down the figures thus—

```
  27 (Multiplicand.)
   9 (Multiplier.)
 ---
 243 (Product.)
```

Beginning with the right-hand figure, we say 9 times 7 are 63; and putting down 3, we carry 6, and say 9 times 2 are 18, and 6 which was carried makes 24; and writing down these figures next the 3, the product is found to be 243.

When the multiplier consists of two or more figures, place it so that its right-hand figure comes exactly under the right-hand figure of the multiplicand; for instance, to multiply 5463 by 34, we proceed as here shown. Here the number is multiplied, first by the 4, the product of which being written down, we proceed to multiply by 3, and the amount produced is placed below the other, but one place farther to the left. A line is then drawn, and the two products added together, bringing out the result of 185742. We may in this manner multiply by three, four, five, or any number of figures, always placing the product of one figure below the other, but shifting a place farther to the left in each line. An example is here given in the multiplying of 76843 by 4563.

```
  5463
    34
 -----
 21852
16389
------
185742
```

```
   76843
    4563
 -------
  230,529
4,610,58
 38,421,5
 307,372
 -------
350,634,609
```

Multiplication is denoted by a cross of this shape ×: thus, 3 × 8 = 24, signifies, that by multiplying 8 by 3, the product is 24. A number which is produced by the multiplication of two other numbers, as 30 by 5 and 6, leaving nothing over, is called a *composite* number. The 5 and 6, called the *factors* (that is, workers or agents), are said to be the *component parts* of 30, and 30 is also said to be a multiple of either of these numbers. The equal parts into which a number can be reduced—as the twos in 30—are called its aliquot parts. A number which cannot be produced by the multiplication of two other numbers, is called a *prime number*. When the multiplicand and multiplier are the same—that is, when a number is multiplied by itself once—the product is called the *square* of that number: 144 is the square of 12.

Subtraction.

Subtraction is the deducting of a smaller number from a greater, to find what remains, or the difference between them. We subtract when we say, take 3 from 5, and 2 remains; 4 from 10, and 6 remains. To ascertain what remains, after taking 325 from 537, we proceed by writing the one under the other, as here indicated, and then subtracting. Commencing at 5, the right-hand figure of the lower and smaller number, we say, 5 from 7, and 2 remains; setting down the 2, we say next, 2 from 3, and 1 remains; and setting down the 1, we say, 3 from 5, and 2 remains; total remainder, 212.

```
537
325
---
212
```

To subtract a number of a higher value, involving the *carrying* of figures and supplying of tens, we proceed as in the margin. Commencing as before, we find that 5 cannot be subtracted from 2, and therefore supply or lend 10 to the 2, making it 12; then we say, 5 from 12, and 7 remains. Setting down the 7, we take 1, being the decimal figure of the number which was borrowed, and give it to the 1, making it 2, and taking 2 from 3, we find that 1 remains.

```
8432
6815
----
1617
```

Setting down the 1, we go to the 8, and finding it cannot be taken from the 4 above it, we lend 10 to the 4, making it 14, and then we say, 8 from 14, and 6 remains. In the same manner as before, adding the first figure of the borrowed number (1) to the 6, we say, 7 from 8, and 1 remains; thus the total remainder is found to be 1617. From these explanations, which apply to all calculations in subtraction, it will be observed, that when the upper figure is less than the figure directly under it, 10 is to be added, and for this *one* is carried or added to the next under figure.

Subtraction is denoted by a small horizontal line, thus — between two figures; as, for example, $9 - 5 = 4$, which means, 5 subtracted from 9, and 4 remains. Again, $19 - 11 = 8$; that is, 11 taken from 19 leaves 8; or 19 diminished by 11, equal to 8.

Division.

Division is that process by which we discover how often one number may be contained in another, or by which we divide a given number into any proposed number of equal parts. By the aid of the Multiplication Table, we can ascertain without writing figures how many times any number is contained in another, as far as 144, or 12 times 12; beyond this point notation is employed. There are two modes of working questions in division—one long, and the other short. Let it be required to divide 69 by 3: according to the long method, we write the figures 69 as annexed, with a line at each side, and the divisor, or 3, on the left. The question is wrought out by examining how many times 3 is in 6, and finding it to be 2 times, we place 2 on the right side; then, placing 6 below 6, we draw a line and bring down the 9, and proceed with it in the same manner. The quotient is found to be 23. But we take a more difficult question—the division of 7958 by 6. In commencing, we find that there is only one 6 in 7, and 1 over; we therefore place the 6 below the 7, and subtract it, in order to bring out the 1. The 1 being written, we bring down the 9 to it, and this makes 19. There being 3 times 6 in 18, we place the 3 to the product (which in division is called the *quotient*—literally, How many times!), and 18 below the 19, leaving 1 over as before. To this 1 we bring down the 5, and trying how many sixes there are in 15, it appears there are only 2. We place 2 to the quotient, and 12 below the 15. This leaves 3 over, and bringing down 8 to the 3, we have 38, in which there are 6 sixes. Six sixes make 36; therefor placing 6 to the quotient, and 36 below the 38, we find that there are 2 over. Here the account terminates, it being found that there are 1326 sixes in 7958, with a remainder of 2 over. In this question, 6 is called the *divisor*; the 7958 is the *dividend*, and 1326 is the *quotient*.

```
3) 69 (23
   6
   ---
   9
   9
```

```
6) 7958 (1326
   6
   --
   19
   18
   --
   15
   12
   --
   38
   36
   --
    2
```

Skilful arithmeticians never adopt this long method of division; they pursue a plan of working out part of the question in the mind, called Short Division. They would, for example, treat the above question as here shown. The over number of 1 from the 7 is carried in the mind to the 9, making 19; the 1 from 19 is in the same manner carried to the 5; and the 3 from it is carried to the 8, leaving the overplus of 2.

```
6) 7958
   ------
   1326-2
```

Division is denoted by the following character ÷; thus 75 ÷ 25, signifies that 75 is to be divided by 25. For example, 240 ÷ 8 = 30.

By employing the signs, abbreviations above adverted to, any arithmetical operation may be very briefly stated; thus $8 + 6 - 4 \times 3 \div 5 = 6$.

These explanations conclude the subject of simple or abstract numbers. On the substructure of the few rules in Addition, Multiplication, Subtraction, and Division, which we have given, whether in reference to whole numbers or fractions, every kind of conventional arithmetic is erected, because these rules are founded in immutable truths. Mankind may change their denominations of money, weights, and measures, but they can make no alteration in the doctrine of *abstract* numbers. That 2 and 2 are equal to 4, is a truth yesterday, to-day, and for ever; but as to how many pence are in a shilling, or how many inches in a foot, these are altogether matters of arbitrary arrangement, and the treatment of them forms an inferior department of arithmetical study, taking a different form in different countries; this *local* arithmetic, as we may call it, is comprehended in the term

COMPOUND NUMBERS OR QUANTITIES.

The calculation of the value of any number of articles, or a summation of values, in relation to money, would be comparatively simple if the scale of money were constructed on a principle of decimals, or advancing by tens—as, for example, 10 farthings 1 penny, 10 pence 1 shilling, 10 shillings 1 pound. By making both weights and measures on the same plan, as 10 ounces 1 pound, 10 pounds 1 stone, 10 stones 1 hundredweight; 10 inches 1 foot, 10 feet 1 yard, &c., ordinary calculations would be rendered exceedingly easy. Thus if an ounce cost 1d., a pound would cost 1s., and a hundredweight would cost 100s. or £10; or, reversing the question, if we were asked £10 per hundredweight for any article, we should know in an instant that it was at the rate of 1d. an ounce. In short, the greater number of arithmetical calculations would be accomplished by little more than a momentary reflection, without the aid of pen or pencil.

This very convenient system of decimal arithmetic is established in France and Belgium, and it is there carried to a most enviable degree of perfection: as, for example, in money reckoning, the *franc* (equal to our 10d.) is the standard coin of account, and is divided into 100 parts called *centimes*. There is an equal simplicity in the money reckoning of the North American Union, in which the dollar (equal to our 4s. 3d.) is divided into 100 centimes; but as weights and measures are not on the same decimal scale, the advantage is of comparatively small moment.

In the United Kingdom, the pound or sovereign is the standard in money. It consists of a series of inferior coins, advancing irregularly from a farthing upwards; as 2 farthings 1 halfpenny, 2 halfpence or 4 farthings 1 penny, 12 pence 1 shilling, 20 shillings 1 pound. While, therefore, the French compute values in money by francs and centimes, and the Americans by dollars and centimes, we compute by pounds, shillings, and pence; and to ascertain the value of irregular quantities in these irregular denominations of money, there is a complex set of rules to be obeyed; indeed, it may be said that the principal part of the time usually spent by youth at school on arithmetic, is consumed in learning to work questions in this arbitrary and local department of the science. We have only room to give a few examples in this species of computation.

L is the initial letter of the Latin word *libra*, a pound, and is used to denote pounds; *s* from the Latin word *solidus*, for shillings; and *d* from *denarius*, for pence: *£ s. d.* are therefore respectively placed over columns of pounds, shillings, and pence. The mark for a halfpenny is $\frac{1}{2}$, for a farthing $\frac{1}{4}$, and for three farthings $\frac{3}{4}$. To find the number of farthings, pence, and shillings, in any number of pounds, we multiply by 20, which brings the pounds to shillings; next by 12, which brings the shillings into pence; and lastly, by 4, which brings the pence into farthings; as, for example, Required the number of farthings in £5—we proceed as in the margin. The result is observed to be 4800 farthings.

```
£5
20
---
100
12
----
1200
4
----
4800
```

Compound Addition.

In ordinary transactions of business, and making up of accounts, Compound Addition—that is, the addition of monies—is principally required. In the margin is

an account of sums to be reckoned up. The first thing done is to add together the halfpence and farthings in the right-hand side; and in doing so, we throw all into farthings. Thus, 2 and 1 are 3, and 3 are 6, and 2 are 8, and 2 are 10. Ten farthings are 2 pence, and 2 farthings, or one halfpenny over. We set down ½ for the halfpenny, and carry the 2 to the pence column; this being added, we find there are 31 pence, which make 2 shillings and 7 pence. We write down the 7, and carry the 2 shillings to the shillings column; adding them to the under figure at the right-hand side, we reckon up thus—2 and 2 are 4, and 5 are 9, and 7 are 16, and 4 are 20, and 2 are 22; we put down 2 aside, and carrying 2 to the second row of the shillings column, we find on summing it up, that it amounts to 7; this 7 and the 2 set aside make 72 shillings—that is, £3, 12s.; 12, therefore, is written down under the shillings column, and the 3 pounds are carried to the pounds column, which is added up as in Simple Addition, making 320. Thus the sum-total is £320, 12s. 7½d. All accounts in Compound Addition referring to British money are performed in the same manner. We recommend young persons to acquire facility in adding; and it will save much time if they learn to sum up the columns by a glance of the eye, without naming the numbers; for instance, instead of saying 2 and 2 are 4, and 5 are 9, and 7 are 16, and 4 are 20, and 2 are 22, acquire the knack of summing the figures in the mind, thus—2, 4, 5, 9, 16, 20, 22.

£31	12	7½
73	14	8½
69	17	5½
87	15	6½
57	12	3½
£320	12	7½

Compound Multiplication.

Questions in Compound Multiplication are determined in the following manner:—Having written down the number to be multiplied, place the multiplier under the lowest denomination, and proceed as in this example. We wish to multiply the sum of £37, 16s. 8¾d. by 6. We begin by multiplying the farthings by the 6; this makes 18 farthings, or 4½d. Setting down the ½, we carry the 4 to the pence, saying 6 times 8 are 48, and 4 are 52, which is equal to 4 shillings and 4 pence. Setting down the 4 pence, we carry the 4 shillings onward, and multiplying 16 by 6 find 96, which, added to the 4 shillings, gives 100. This is equal to £5, so we set down 0, and carry the 5 to the 37. The amount is 227. The answer of the question is therefore £227, 0s. 4½d.

£37	16	8¾
		6
£227	0	4½

Compound Subtraction.

Compound Subtraction is performed as in the following question:—If we take £27, 17s. 8¾d. from £36, 14s. 5½d., how much remains? The first thing we are called on to do, is to take 3 farthings from 2 farthings, or ½d., and as this cannot be done, we *borrow* a penny, or 4 farthings, and adding these to the 2 farthings, we have 6. We now take 3 from 6, and find that 3 remains, which is therefore written down. It is now necessary to account for the borrowed penny, and a means of doing this would be to consider the pence of the upper line of figures as so much less, or 4d. instead of 5d. It is found, however, to be the most convenient plan to add 1 to the pence of the lower line, which comes to the same thing. Adding 1 to 8, in this case, we have 9 to subtract from 5. As this cannot be done, we borrow 1s., which is 12 pence, and adding that 12 to the 5 makes 17, from which taking 9, there will remain 8, which is placed under the pence. The borrowed 1s. is also repaid by adding 1 to the 17, making thus 18 to be taken from 14; but as we cannot do this either, we borrow £1, which is 20s. Adding 20s. to 14 makes 34; then 18 from 34 leaves 16. This is placed under the shillings, and 1 is carried to the lower amount of pounds, which are then subtracted as in Simple Subtraction; thus, 1 to 7 is 8, 8 from 6, cannot, but 8 from 16, there remains 8; carry 1 to 2 is 3, and 3 from 3, nothing remains. Total sum remaining, £8, 16s. 8¾d.

£36	14	5½
27	17	8¾
£8	16	8¾

Compound Division.

Compound Division is performed as follows:—We wish to divide £87, 14s. 9¾d. into 7 equal parts. Dividing 87 by 7, as in Simple Division, the answer is 12, and 3 remain—that is, 3 pounds are over. We set down the 12, and taking the 3 which is over, we reduce it to its equivalent in shillings, that is 60; we then add the 60 to 14, making 74, which being divided by 7 gives 10 shillings, and 4 shillings over. Setting down the 10, we carry forward the 4; 4 shillings are 48 pence, which, added to 9, makes 57. This divided by 7 gives 8 and 1 penny over; a penny is 4 farthings; add to these the 3 in the dividend, thus making 7; 7 divided by 7 gives 1, that is ¼d. The sum desired, then, is £12, 10s. 8¼d.

£	s.	d.
7)87	14	9¾
12	10	8¼

If the divisor is a composite number—the product of two numbers individually not exceeding 12—we can divide first by one and then by the other, as follows:—Divide £376, 11s. 1½d. by 63: 63 is a composite number; its component parts are 7 and 9 (seven nines are 63). The given amount, therefore, is first divided by 7, and the quotient, £53, 15s. 10½d. is divided by 9. The result is the same as if the original sum had been divided by 63. £5, 19s. 6½d. is the quotient.

£	s.	d.
7)376	11	1½
9)53	15	10½
5	19	6½

When the divisor is a prime number above 12, the work is in every respect similar to the former; but it is performed by long division, as in the annexed example:—Divide £484, 19s. 7¾d. by 73. The amount being written down as in long division of simple numbers, the pounds are first divided by 73; the answer is 6. The remainder 46 is reduced to shillings by multiplying by 20, and the 19s. in the sum we are dividing being taken in, makes together 939s., which, divided by 73, gives 12, and 63 of a remainder. These 63 shillings are now reduced to pence by being multiplied by 12, and the 7 being taken in, makes 763; this, divided by 73, gives 10, and 33 over, which, being reduced to farthings by being multiplied by 4, and the three taken in, makes 135; and this, divided by 73, gives 1, and 62 over. The whole answer is £6, 12s. 10¼d. and a fraction $\frac{62}{73}$ over.

£	s.	d.
73)484	19	7¾(6
438		
46		
20		
73)989(12		
73		
209		
146		
63		
12		
73)763(10		
73		
33		
4		
73)135(1		
73		
62		

British Weights and Measures.

The working of accounts in weights and measures, as respects addition, multiplication, subtraction, or division, proceeds on principles similar to those which have now been explained. The only real difference is that, for example, in reduction, instead of multiplying by 20, by 12, and by 4, to reduce a sum to farthings, if the question refer to ordinary weights we multiply to bring out the number of hundredweights, 112 for pounds, and 16 for ounces. Suppose we wish to know how many ounces are in 15 tons: we multiply 15 by 20, and the result is 300—that is, 300 hundredweights; a hundredweight is 112 pounds, so we now multiply 300 by 112, and the result is 33,600 pounds; this multiplied by 16, the number of ounces in a pound, gives 537,600 ounces. In the addition of quantities, each denomination is set down in its own column, as in money, and the summation is made also as we add money, with the difference, that we carry forward ounces, pounds, or whatever it may be, to the next column. The mark *cwt.* is usually employed to indicate hundredweights, *lb.* pounds, and *oz.* ounces.

The following are the principal tables of weights and

measures established by law in the United Kingdom, and hence called *imperial*. That which is entitled *avoirdupois weight* is the table in use for all ordinary purposes :—

I.—MEASURE OF LENGTH.

Inches.											
12	...	1 Foot.									
36	...	3	...	1 Yard.							
198	...	16½	...	5½	...	1 Pole or Perch.					
7,920	...	660	...	220	...	40	...	1 Furlong.			
63,360	...	5280	...	1760	...	320	...	8	...	1 Mile.	

The hand = 4 inches; the English ell = 45 inches; the pace = 5 feet; and the fathom = 6 feet. The geographical degree = 20 nautical leagues, or 69·121 miles. In land measure, the chain of 100 links = 66 feet; a link is equal to 7·92 inches.

II.—MEASURE OF SURFACE.

Sq. Inches.											
144	...	1 Sq. Foot.									
1,296	...	9	...	1 Sq. Yard.							
39,204	...	272¼	...	30¼	...	1 Sq. Pole.					
1,568,160	...	10,890	...	1210	...	40	...	1 Rood.			
6,272,640	...	43,560	...	4840	...	160	...	4	...	1 Acre.	

And 640 acres make 1 square mile.

III.—MEASURES OF CAPACITY.

1. *Solidity.*

1728 cubic inches = 1 cubic foot.
27 cubic feet = 1 cubic yard.

The ton measurement = 8 barrel bulk, or 40 cubic feet.

2. *Measure for Liquids, Corn, and Dry Goods.*

Cubic Inches.	Wat. lbs. av.										
8·665	$\frac{5}{16}$	1 Gill.									
34·659	1¼	4	...	1 Pint.							
69·318	2½	8	...	2	...	1 Quart.					
277·274	10	32	...	8	...	4	...	1 Gal.			
554·548	20	64	...	16	...	8	...	2	...	1 Peck.	
2218·19	80	256	...	64	...	32	...	8	...	4	...
17745·5	640	2048	...	512	...	256	...	64	...	32	...

4 pecks = 1 bushel; 8 bushels = 1 quarter.

The peck, bushel, and quarter, are used for dry goods only. There are, besides, the coom = 4 bushels; the wey or load = 5 quarters; and the last = 2 loads or 10 quarters.

According to the system introduced January 1, 1826, the imperial gallon contains 277,274 cubic inches, or 10 lbs. avoirdupois of distilled water at 62° Fahrenheit, the barometer being at 30 inches. Heaped measures (formerly used for dry goods) were abolished in 1835.

IV.—MEASURES OF WEIGHT.

1. *Avoirdupois.*

Troy Grains.												
27·34375	1 Drachm.											
437·5	16	...	1 Ounce.									
7000	256	...	16	...	1 Lb.							
98000	3,584	...	224	...	14	...	1 Stone.					
196000	7,168	...	448	...	28	...	2	...	1 Qr.			
784000	28,672	...	1,792	...	112	...	8	...	4	...	1 Cwt.	
15680000	573,440	...	35,840	...	2240	...	160	...	80	...	20	... 1 Ton.

FLOUR WEIGHT.—1 peck = 14 pounds; 1 boll = 140 pounds; 1 sack = 280 pounds, or 2½ cwt.; 1 barrel = 196 lbs.

2. *Troy Weight.*

Grains.							
24	...	1 Pennyweight.					
480	...	20	...	1 Ounce.			
5760	...	240	...	12	...	1 Pound.	

This weight is used in weighing gold, silver, platina, &c. The fineness of gold is expressed in carats and grains, the pound or other weight being divided into 24 carats, and the carat into 4 grains. Thus the carat pound is the 24th part of the troy pound, or 10 dwts., and the carat grain the 96th part of the troy pound, or 60 troy grains.

In *Beer Measure*, the barrel contains 4 firkins or 36 gallons; and the hogshead 1½ barrel or 54 gallons.

In *Wine Measure*, besides the gallon and its subdivisions, various denominations are used, as the butt, pipe, *&c.*; but these are now to be considered rather as the names of casks than as expressing any definite number of gallons. The *standard gauges* in trade are as follows:—Pipe of port, 115 imp. galls.; pipe of Lisbon, 117 do.; pipe of Cape or Madeira, 92 do.; pipe of Teneriffe, 100 do.; butt of sherry, 108 do.; hogshead of claret, 46 do.; aum of hock, 30 do.

Herrings are measured by the barrel of 26⅔, or cran of 37½ gallons.

Apothecaries' Weight.—20 troy grains make 1 scruple, 3 scruples make 1 drachm, and 8 drachms make 1 ounce. The ounce and pound are the same as in troy weight. This weight is used in medical prescriptions only. The fluid measures used by apothecaries are—60 minims make 1 fluid drachm, 8 drachms 1 fluid ounce, 20 fluid ounces 1 pint, 8 pints 1 gallon. (See No. 48.)

The Scottish acre, formerly a standard in Scotland, and now abolished, consisted of 54937·15 imperial square feet; 28 Scots acres were very nearly equal to 29 imperial acres. The Scottish *choppin* was very nearly the English wine quart, and the *mutchkin* was rather more than the English pint. Previous to the Union with England, the Scottish money pound was equal to one shilling and eightpence English. Hence £100 Scots was equal to the sum of £8, 6s. 8d. in our present money.

V.—MEASURES OF TIME.

A second	.	.	.	sec.	sec.		min.						
60 sec.	=	1 minute	.	1 min.	60	=	1	hr.					
60 min.	=	1 hour	.	1 hr.	3600	=	60	=	1	day.			
24 hr.	=	1 day	.	1 day	86400	=	1440	=	24	=	1	wk.	
7 days	=	1 week	.	1 wk.	604800	=	10080	=	168	=	7	=	1

365 days, or 52 weeks 1 day = 1 common year.
366 days, or 52 weeks 2 days = 1 leap year.
365 days 6 hours = 1 Julian year.
365 days 5 hours 48 minutes 49 seconds = 1 solar year.

French Weights and Measures.

As French weights and measures are now frequently referred to in literature, we think it proper to offer the following particulars on the subject:—

The French system of weights and measures is established on a principle much more simple and unerring than that in use in England—the former is of universal application, the latter can never be anything but local. The French unity of length and weight is based on an invariable dimension of the terrestrial globe, which is recognisable in all countries. It is independent of all extrinsic notions, such as gravity and the arbitrary subdivisions of duration, an advantage which the length of a seconds pendulum certainly does not present. The admeasurement of a fourth of the earth's meridian—an ideal circle going round the globe from pole to pole at right angles with the equator—constitutes the basis of the French system. The length of this fourth of the meridian is divided into 10,000,000 parts; a single ten-millionth part is the *metre*, or the unity of long measure. (A metre is equal to 39⅜ British inches.)

A square, measuring on each side 10 metres, forms the *are*, or the unity of the mensuration of surface. (40⅙ ares are nearly equal to one British acre.)

A cube, measuring on each of its sides 1 metre, constitutes the *stère:* used for dry measure.

A cube, measuring on each of its sides the tenth part of a metre, is the unity of volume. A vessel gauging such a cube, is the unity of liquid measures, and is called the *litre*. (A litre is equal to about a pint and three-quarters, or nearly a quart British measure.)

The weight of a cube of water, measuring on each of its sides the 100th part of a metre, is the unity of weight, and is called the *gramme*. A thousand grammes of pure water at its greatest density (about 40 degrees of Fahrenheit's thermometer), are of course equivalent to the litre. (A thousand grammes, forming 1 kilogramme, weigh about 2⅛ pounds British.)

These unities being often too great or too small for common use, they constitute the basis of new unities on the simple decimal principle. The names of these new unities are formed from Greek and Latin words. If to express multiplication of the original unity, Greek is

used; if to express division of the original unity, Latin is used, or words slightly modified from it. The Greek words are, *deka*, for ten, *hecto*, a hundred, *kilo*, a thousand, and *myria*, ten thousand. The Latin words are, *decem*, for ten, *centum*, a hundred, and *mille*, a thousand. These various words are placed before, or prefixed to, the principal unity. Thus the *decametre* is equal to ten metres, and the *decimetre* is the tenth part of a metre; the *hectolitre* is equal to 100 litres, and the *centilitre* is the hundredth part of a litre; the *kilogramme* is equal to a thousand grammes, and the *milligramme* is the thousandth part of a gramme.

The connection between these weights and measures will now be clearly seen. The *are* is the square decametre; the *litre* is the cubic decimetre; and the kilogramme is the weight of a litre of pure water at its maximum density.

The currency of the country being assimilated by decimal reckoning to the weights and measures, it may be safely averred that the whole world cannot produce a more simple and immutable plan of calculation than that now in use in France and in Belgium.

FRACTIONS.

Hitherto we have spoken only of whole numbers, which in arithmetic are called *integers*. We have now to treat of fractions, or the parts into which integers may be broken. The more ordinary fractions of any single article or number are a half, third, quarter, &c.; but a number admits of being divided into any quantity of equal parts. All such fractions are called *vulgar fractions*, from their being common. It is the practice to write vulgar fractions with two or more small figures, one above the other, with a line between, as follows:—$\frac{1}{2}$ (one-half), $\frac{1}{3}$ (one-third), $\frac{1}{4}$ (one-fourth or quarter), $\frac{1}{8}$ (one-eighth), $\frac{4}{5}$ (four-fifths), $\frac{9}{10}$ (nine-tenths), and so on. In these and all other instances, the upper number is called the *numerator*, the lower the *denominator*. Thus in the fraction $\frac{9}{10}$, 9 is the numerator, and 10 the denominator—the latter denominating or showing into how many parts the original unit is supposed to be divided, and the former pointing out how many such parts are in the fraction spoken of.

It may happen that it is necessary to add together different fractions to make up whole numbers. In working all such questions, we must, in the first place, bring all the fractions into one kind: if we have to add $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$ together, we make all into eighths, and see how many eighths we have got; thus $\frac{1}{2}$ is $\frac{4}{8}$; then $\frac{1}{4}$ is $\frac{2}{8}$, that is 2 and 4, which make 6, and $\frac{1}{8}$ makes a total of $\frac{7}{8}$. The same plan is to be pursued in the subtraction of vulgar fractions.

It is sometimes necessary to speak of the tenths, hundredths, or thousandths of a number, and for this arithmetic has provided a system of *decimal fractions*. Where great exactness of expression is required, decimals are indispensable. It has been already shown that in writing common numbers, the value of a figure increases by ten times as we proceed from right to left; in other words, we ascend by tens. Now there is nothing to prevent us in the same manner descending by tens from unity. This is done by decimal fractions. We place a dot after unity, or the unit figure, which dot cuts off the whole number from its fractional tenths; thus, 120·3 means 120 and 3-tenths of a whole; if we write 120·31, the meaning is 120 and 31-hundredths of a whole—that is, 31 parts in 100 into which a whole is supposed to be divided. If we go on adding a figure to the right, we make the fraction into thousands; as, for instance, 120·315, which signifies 120 and 315 out of a thousand parts.

Tables of specific gravities, population, mortality, and many matters of statistics, are greatly made up of decimal fractions, and therefore it is proper that all should comprehend the principle on which they are designed. In many cases, it would answer the purpose to write the fractions as vulgar fractions; but there is a great advantage in reducing all broken parts to the decimal notation, for it allows of adding up columns of decimals all of the same denomination. Their great excellence, indeed, consists in the uniformity which they give to calculation, and the easy methods which, by these means, they present of pursuing fractional numbers to any degree of minuteness.

The method of reducing a vulgar to a decimal fraction is a simple question in Division. For instance, to reduce $\frac{3}{4}$ to a decimal, we take the 3, and putting two ciphers after it, divide by 4, thus $\frac{4)300}{\cdot 75}$; therefore ·75 is the decimal; or, what is the same thing, 75-hundredth parts of a whole are equal to three-quarters.

SERIES AND RATIOS OF NUMBERS.

A *series* of numbers is a succession of numbers that increase or decrease according to some law. Of the two kinds of series usually treated of in arithmetic, the simpler is one whose terms increase or decrease by some constant number called the *common difference*. This common difference or rate of increase is only *one*, when we say 4, 5, 6, 7, 8; it is *two* when we say 7, 9, 11, 13; and *four* when we say 6, 10, 14, 18, and so on. Every advancement of this nature, by which the same number is added at every step, is called *arithmetical progression*. There is a different species of advancement, by which the last number is always multiplied by a given number, thus causing the series to mount rapidly up. Suppose 4 is the multiplier, and we begin at 2, the progression will be as follows:—2, 8, 32, 128, 512, 2048, and so on. It is here observed, that multiplying the 2 by 4, we have 8; multiplying the 8 by 4, we have 32; and multiplying the 32 by 4, we have 128, &c. till at the fifth remove we attain 2048. This kind of advancement of numbers is called *geometrical progression*. The very great difference between the two kinds of progression is exemplified in the following two lines, the number 3 being added in the one case, and being used as the multiplier in the other:—

5, 8, 11, 14, 17—Arithmetical Progression.
5, 15, 45, 135, 405—Geometrical Progression.

In the case of arithmetical progression, as above or in any other manner exemplified, it may be noticed that the amount of the first and last term is always the same as twice the amount of the middle term; thus 5 and 17 being 22, are equal to twice 11, or 22. The cause of this is, that as the numbers increase or decrease in equal degrees, the last number is just as much more as the first is less than the number in the middle; and the two being added, the amount must consequently be double the central number. The same rule holds good with respect to any two numbers at equal distances from the number in the middle. If the series be an even number, and do not possess a middle term, then the two terms nearest the middle (called the mean terms) must be added together; thus in the natural series from 1 to 24, 12 and 13 are the two nearest the middle, and one being added to the other makes 25, the sum of the first and last term.

In geometrical progression, each term is a factor of all the numbers or terms that follow, and a product of all that go before, so that there is a harmonious ratio pervading the whole. Each term bears an exact proportion to its predecessor, because the multiplier is the same. Supposing, as above, the multiplier to be 3, the term 15 is proportionally greater than 5, as 45 is greater than 15. In the technical language of arithmetic, as 15 is to 5, so is 45 to 15. To save words, such a proposition is written with signs or abbreviations thus—15 : 5 :: 45 : 15. The two dots mean *is to*, and four dots mean *so is*. The same formula is applicable to any series of proportional terms, though not in continued proportion to each other.

In order to discover the ratio between any two terms, we divide the largest by the least, and the quotient is the ratio: 45 divided by 15 gives 3 as the ratio. By thus ascertaining the ratio of two terms, we are fur-

nished with the means of arriving at the ratio of other terms. We cannot do better than explain the method of working out this principle in the ratio of numbers, by giving the following passages from the admirable 'Lessons on Arithmetic,' by Mr T. Smith of Liverpool. Taking the four regularly-advancing terms, 15, 45, 405, and 1215, he proceeds—'Suppose that we had only the first three, and that it were our wish to find the fourth, which term bears the same proportion to the third as the second does to the first. The thing we have first to do is, to discover the ratio between the first and second terms, in order to do which, as before shown, we divide the larger by the smaller, and this gives us the ratio 3, with which, by multiplying the third term, we produce the fourth; or let the three terms be these, 405, 1215, 5, and let it be our wish to find a fourth which shall bear the same relation to the 15 as 1215 does to 405. We divide and multiply as before, and the fourth term is produced. And in this manner, having *two* numbers or two quantities of any kind, bearing a certain proportion towards each other, and a *third*, to which we would find a number or quantity that should bear a like proportion, in this manner do we proceed, and thus easily may we find the number we require.'

Referring to the discovered ratio of 45 to 15 to be 3, or the fifteenth part—'Now,' continues this author, 'what would have been the consequence had we multiplied the third term (405) by the whole, instead of by a fifteenth part of the second? The consequence would have been, that we should have had a term or number fifteen times larger than that required. But this would be a matter of no difficulty; for it would be set right at once, and our purpose gained, by dividing the over-large product by 15. Let us write this process down: $405 \times 45 = 18225$, and $18225 \div 15 = 1215$,—which 1215 bears the same proportion to 405 as does 45 to 15. And this is the rule, when the terms are properly placed—*Multiplying the second and third terms together, and dividing the product by the first;* this avoids all the difficulties arising from the occurrence of fractions in the course of the process, and gives us in all cases any proportional terms we may require.'

Rule of Three.

On the principle now explained, we can, in any affairs of business, ascertain the amount of an unknown quantity, by knowing the amount of other three quantities, which, with the unknown quantity, bear a proportional relation. The word *quantity* is here used, but any *sum of money* is also meant.

Let it be remembered that the *ratio* of one number to another is the number of times that the former contains the latter; for example, the ratio of 6 to 3 is 2, that of 12 to 4 is 3, and that of 8 to 12 is $\frac{2}{3}$. When two numbers have the same ratio as other two, they constitute a *proportion*. Thus the ratio of 8 to 6 is the same as that of 12 to 9, and the equality of these two ratios is represented thus:—

$$8 : 6 = 12 : 9, \text{ or } 8 : 6 :: 12 : 9.$$

The following is the rule for stating and working questions:—Make that term which is of the same kind as the answer sought, the *second* or *middle* term. Consider, from the nature of the question, whether the answer should be more or less than this term; if *more*, make the *smaller* of the other two terms the *first*, and the *greater* the *third;* if the answer should be *less* than the middle term, make the *greater* of the two terms the *first*, and the *smaller* the *third;* then multiply the second and third terms together, and divide the result by the first term. The quotient found will be the answer to the question, and it will be found to bear the same proportion to the third term as the second does to the first. Suppose the question be this: If 3 lbs. of tea cost 9s., how many pounds may be purchased for 21s.?—state the terms, with the larger sum last. Should the question, however, be the reverse—If 7 lbs. of tea cost 21s., how much may be purchased for 3s.?—then the sum to be ascertained is less, and is put last. Suppose another plain example: If 10 men can execute a piece of work in 8 days, how long will 4 men take to do the same?

```
9 : 3 :: 21
             3
          9)63
             7 lbs.
600

21 : 7 :: 3
           7
      21)21
          1 lb.

4 : 8 :: 10
           8
        4)80
       20 days.
```

Such is the principle of working Rule of Three questions, whatever be their apparent complexity. If either the first or third term, or both, include fractional parts, they must be reduced to the denomination of the fractions before working: thus if one be reduced to shillings, the other must be made shillings also; if to pence, both must be pence; and so on. If the middle term be also a compound quantity, it may either be reduced to its lowest term, before multiplying and dividing by the other terms, or you may multiply and divide by Compound Division and Multiplication.

If the middle term be reduced to its lowest term, the answer will be in that denomination to which it was reduced; thus if it were brought to farthings, the answer would be in farthings; if to ounces, the answer would be in ounces.

Example.—If 2 cwts. 1 qr. 7 lbs. sugar cost £8, 14s. 4d., what will 14 cwts. 3 qrs. cost?

```
cwt. qr. lb.    £  s.  d.      cwt. qr. lb.
 2   1   7  :  8  14   4  ::   14   3   0
 4                 20             4
 9                174            59
28                 12            28
259               2092           472
                                 118
                                1652
                                2092
                                3304
                              14868
                              33040
                        259)3455984(12)13343
                            259        20)1111-11
                            865            £55 11 11½
                            777
                            889
                            777
                            1128
                            1036
                              924
                              777
                              147
                                4
                        259)588(2
                            518
                             70
```

Here, in order to make the first term a simple number, it is reduced to its lowest term—namely, lbs. The third term is therefore reduced to lbs. also, that both may be alike. The second or middle term is reduced to its lowest term, pence. After multiplying and dividing, according to rule, the quotient is 13343 pence, which are brought to shillings and pounds. The remainder, 147, being farther reduced to farthings, and divided by the first term, gives 2 farthings. The answer is £55, 11s. 11½d. $\frac{2}{259}$.

The following is a kind of question which often occurs in business:—A person is unable to pay his debts. He owes to A £540, to B £260, to C £200, being in all £1000. On examining his affairs, it is found that he possesses property only to the value of £370. How, then, is this to be divided proportionally among the three creditors, so that each may receive a fair share? The way to arrive at an answer, is to work out each creditor's share as a distinct account. Thus, first, as to A's share:—

```
£      £      £
1000 : 370 :: 540
              570
            37800
             1620
                        £   s.
1000)199800(199  16
     1000
      9980
      9000
       9800
       9000
        800
         20
1000)16000(16
     16000
```

The answer is £199, 16s. Following a similar calcu-

lation, we find that B will receive £96, 4s., and C £74. Another method of computation would consist in ascertaining how many shillings per pound the effects would yield. In this case we state the terms as annexed.—Answer, 7s. 4¾d. ¼, or a fraction more than seven shillings and fourpence three farthings in the pound. By allotting this rate of dividend to each creditor, their respective shares would be liquidated as above. Instead of dividing 7400 by 1000, the same result will be found if 74 be divided by 10.

```
   £        £        £
1000 : 370 : : 1
          20
1000)7400(7s. 4¾d. ¼
     7000
      400
       12
1000)4800(4
     4000
      800
        4
1000)3200(3
     3000
      200/1000 = ¼
```

Questions in arithmetic arise in which a sixth term is required, bearing a proportion to five terms already known. This, which involves what is called *Double Rule of Three*, is exemplified as follows:—If I give 16 men £45 for 28 days' work, what must I give, at the same rate, to 20 men for 35 days' work? The answer, according to the plan of working here shown, is £70, 6s. 3d.

```
Men.  £    Men.
16 : 45 : : 20
28          35
128         700
32          45
448         3500
            2800          £  s.  d.
448)31500(70  6  3
    2136
     140
      20
448)2800(6
    2688
     112
      12
448)1344(3
    1344
```

Practice and Mental Arithmetic.

Under these names are comprehended short practical methods of working arithmetical questions, partly or wholly by the mind, or by the jotting of a few figures. Ordinary business questions are seldom solved by the Rule of Three, but principally by Practice or Mental Arithmetic. The kind of questions most commonly occurring are computations of the aggregate value of a certain number of articles at a certain price, and the adding of the whole together to find the sum-total. The plan usually adopted is to calculate the value of any number of articles by the nearest round sum, and then to apply the difference. For instance, a lady is buying a gown from a haberdasher; she has received 5 yards at 5½d. per yard; the haberdasher tells her in an instant she has to pay 6s. 10½d. He knows it is so by saying internally to himself—15 yards at 6d. would be 7s. 6d.; then if I take 15 halfpence, that is, 7½d., from the 7s. 6d., I find that 6s. 10½d. will remain.

Another principle followed in this practical arithmetic is to work by aliquot parts. By remembering that a penny is the 12th of a shilling, or the 240th of a pound; that 6s. 8d. is the third of a pound; that 3s. 4d. is the sixth of a pound, and so on, we are able to save much of the ordinary figuring. As an illustration, let it be required to find the value of 3567 articles at 3s. 4d. each. By the usual rules of arithmetic, this question would be performed by multiplying the 3567 by 40 (there being 40 pence in 3s. 4d.), and then dividing by 12 to bring it into shillings, and by 20 to bring it into pounds. The practical method is much shorter; 3s. 4d. being the sixth of a pound, if we divide 3567 by 6, we at once obtain the amount thus—

```
6)3567
  £594, 10s.
```

Interest.

Interest is an allowance for the use of money, paid by the borrower to the lender. The amount of allowance on £100 is called the *rate of interest*. The amount of money lent is styled the *principal*. In the United Kingdom, it is customary to reckon the interest at a certain rate per hundred pounds per annum, or for the whole year. The hundred pounds, for shortness, is called *cent.*, a contraction of *centum* (Latin), a hundred. If the money is lent for a less term than a year, then it becomes a question in arithmetic what is the proportion of interest chargeable. According to the existing laws (1849), £5 per cent. is the highest legal interest that is chargeable on money lent in any other form than by a bill or promissory-note. The interest, commonly called *discount*, that may be taken for advances on bills or promissory-notes is left unlimited. In general it varies from about 4 to 6 per cent., according to the state of the money market or trustworthiness of the borrower. £5 being equal to 100 shillings, the interest on £1 for a year at 5 per cent. is consequently 1s.; and if the interest be £2, 10s., or 2½ per cent., the charge will of course be 6d. per £1. This is so very simple a matter of calculation, that interests of 5 or 2½ per cent. per annum may in most instances be calculated mentally, or at least with a few figures. When the interest is 3, 3½, 4, or 4½, per cent., and for a less period than a year, the calculation is more complex, and will require to be wrought as a question in Rule of Three, or the amount may be determined by an appeal to Interest Tables.

Interest on broken periods is not calculated by calendar months, but for days—the exact number of days from the day of lending to the day of paying; and therefore the calculation of the number of days is an important preliminary in the transaction. Bankers and merchants, to save the trouble of calculation, appeal to a table which shows the number of days from one day to another in the different months of the year.

The following is an example of the mode of working a question of interest for a whole year. What is the amount of interest payable on £649, at 4½ per £100 or per cent. per annum?

```
  £     £      £
100 : 4½ : : 649
             4½
            2596
           324-10
      100)2920-10(29 4 1½
          200
           920
           900
            20
            20
      100)410(4
          400
           10
           12
      100)120(1
          100
           20/100 = ⅕
```

Or shorter, as under—

```
£
649
4½
2596
324-10
29,20-10
20
4,10
12
1,20 = £29 4 1½
```

```
   £   s.
 235  10
        7
1648  10
        4
6594   0
       6   s.   d.
73000)39564  0(10  10 10/1825
      20
    791280
    730000
     61280
        12
    735360
    730000
     5360/73000 = 1/1825
```

When the period consists of less than a year (365 days), multiply the principal by the number of days, and by twice the rate, and divide by 73000. (We get this 73000 by multiplying 365 by 2 and by 100). For example—What is the interest of £235, 10s. for 28 days, at 3 per cent. per annum? Here, for convenience, we begin by multiplying by 7 and by 4, instead of 28. The 6 is twice the interest, 3.

When partial payments are made, it is necessary to deduct them from the principal, care being taken not to confuse principal with interest. The following is a rule to follow in such a case:—Calculate the interest on the principal up to the time at which the first par-

tial payment is made, and add it to the principal; from this sum subtract the money paid, and the remainder is a new principal; compute the interest on this principal from the time of the first payment up to the time of the second payment, add it to the latter principal; from the sum subtract the second sum paid, and the remainder is again a new principal; and continue this process till the last payment.

Mensuration.

Mensuration refers to the measurement of objects, and is of three kinds—*lineal*, or measuring by mere length; *superficial*, which respects breadth as well as length; and *solid*, which includes length, breadth, and thickness. In the United Kingdom, the foot of twelve inches is the common standard of measurement. A draper measures cloth with a rod of three feet or one yard, and workmen usually measure the dimensions of walls, or the superficies of apartments, by a ribbon marked in feet and inches. In common usage, the inch is divided into eighths and sixteenths.

As lineal measurement requires no explanation, we pass to a consideration of superficial measurement, or that of both length and breadth. A *superficial foot*, which is the basis of this kind of measurement, is either a square of a foot in length and a foot in breadth—in other words, a foot each way—or it is any dimension in which the length multiplied by the breadth will form a foot. For example, the surface of a piece of wood, 2 feet in length and 6 inches in breadth, is a superficial foot. A superficial foot is generally called a square foot, and is a superficies consisting of 12 times 12, or 144 square inches. Sometimes the term *square feet* is confounded with that of *feet square*, which is quite a different thing. A piece of cloth said to measure six square feet, consists of six squares of a foot each; but a piece said to measure *six feet square* would be six feet along each side, and comprise thirty-six squares of a foot each. Inattention to these distinctions has often led to awkward errors and disputes.

The method of finding the superficial contents of any oblong surface, is to multiply the length by the breadth; but other points require attention in the calculation. To arrive at exactness, the inch is reckoned to contain 12 seconds or parts, each second contains 12 thirds, and each third contains 12 fourths. Feet multiplied by feet, give feet; feet multiplied by inches, give inches; feet multiplied by seconds, give seconds; inches multiplied by inches, give seconds; inches multiplied by seconds, give thirds; and seconds multiplied by seconds, give fourths.

Rule for working questions—1. Write the multiplier under the multiplicand, feet under feet, inches under inches, seconds under seconds, &c. 2. Multiply each denomination of the length by the feet of the breadth, beginning at the lowest, and place each product under that denomination of the multiplicand from which it arises, always carrying 1 for every 12. 3. Multiply by the inches, and set each product one place farther to the right hand. 4. Multiply by the seconds or parts, and set each product another place towards the right hand. 5. Proceed in this manner with all the rest of the denominations, and their sum will be the answer.

Example.—Multiply 6 feet 3 inches by 3 feet 2 inches. In working, we begin by multiplying the 3 inches by 3, and then the 6 feet also by the same 3 below it; this gives 18 feet 9 inches. This makes 18, 9. We now multiply by the 2 inches, placing the 6 one remove to a side. By then multiplying the 6 by 2, we have 12 inches or 1 foot, and setting down the one below the 18, we add up. The answer is 19 feet 9 inches and 6 seconds. Questions of this kind may also be wrought by decimals.

Ft.	In.	
6	3	
3	2	
18	9	
1	0	6
19	9	6

To measure the *solid* contents of an object, a different process is pursued. Suppose we take a piece of wood measuring a square foot, and cover it with dice, each die an inch square and an inch high, the wood will be covered with exactly 144 dice. Let us now put a second layer of dice on the first, and the number will be doubled, or 288 dice; and if we thus go on adding layer above layer till we have 12 layers, the number of dice will be finally 12 times 144, or 1728 dice; in other words, we shall have formed a cube consisting of 1728 solid inches. Such is solid measure.

Solid measure is computed arithmetically, by multiplying the length by the breadth, and the product by the thickness. Civil engineers, who require to calculate the solid contents of masses of earth, with a view to excavation, resort to this simple rule; it is likewise followed by builders in reference to walls, plumbers to cisterns, and other artificers. The following is a question not unlikely to occur. Required the contents of a cistern 9 yards 2 feet in length, 6 yards 2 feet in breadth, and 4 yards 2 feet in depth. Analyse these dimensions—9 yards 2 feet are 29 feet; 6 yards 2 feet are 20 feet. Multiply the 29 by 20, and then multiply by 14 (14 feet being equal to 4 yards 2 feet); next divide by 27, which is the number of solid feet in a solid yard. The question is thus wrought in the margin. The answer is seen to be 300 yards 20 feet.

```
   29
   20
  580
   14
 2320
 580
27)8120
  300 y. 20 f.
```

Evolution.

The extraction or discovery of the square and cube roots of numbers, forms a department of arithmetic called *Evolution*, and is useful in some kinds of measurement. In the following table, the squares, cubes, and fourth and fifth powers of the nine units are given. The square of any number, it will be observed, is gained by multiplying the number by itself; the cube, by multiplying the square by the number; the biquadratic by multiplying the cube by the number; and the sursolid by multiplying the biquadratic by the number:—

Root, or 1st power, .	1	2	3	4	5	6	7	8	9
Square, or 2d power, .	1	4	9	16	25	36	49	64	81
Cube, or 3d power, .	1	8	27	64	125	216	343	512	729
Biquad., or 4th power,	1	16	81	256	625	1296	2401	4096	6561
Sursolid, or 5th power,	1	32	243	1024	3125	7776	16807	32768	59049

The powers of numbers are usually expressed by adding a small figure to them; thus 3^2 signifies the second power or square of 3—that is, $3 \times 3 = 9$; 3^3 signifies the third power or cube of 3, or $3 \times 3 \times 3 = 27$. The small figure thus added is called an *index* or *exponent*, because it indicates or exposes to view the powers of the quantity to which it is affixed. The square root of any small quantity may easily be ascertained by means of the multiplication table; for instance, 6 is at once seen to be the square root of 36, because $6 \times 6 = 36$; but when larger numbers occur, it is requisite to have recourse to another process.

Supposing it were required to find the length of the side of a square which contains 59,049 square inches on its surface, it is evident that it cannot at once occur to the mind what number, by being multiplied into itself, produces this quantity. It is therefore requisite to find the square of one part of the number, and then the square of the other part. To effect this, the whole number is divided into parts, by a dot being placed over each alternate figure, beginning at the unit. The reason for thus separating it into periods of two figures each, is because the square of a single figure never consists of more than two places, the square of a number of two figures of not more than four places, &c.

After the whole number has been thus divided, the root whose square comes nearest to the first period must be placed in the quotient, and its square subtracted from the first period. Thus 5 being the first period, 2, as being the root of 4, is placed in the quotient, and the square of 2 ($2 \times 2 = 4$) is subtracted from 5, because 5 here forms the first period. The next period (90) is then annexed to the remainder for a new dividend. The root is doubled for a divisor, and

```
   59049(243
   4
44)190
   176
483)1449
    1449
```

after ascertaining how often it is contained in the dividend, omitting its last figure, the result (4) is placed both in the quotient and also in the unit's place of the divisor: the whole number (44) thus formed, must be multiplied by 4, and the product must be subtracted from the dividend. The same process must be repeated until there is no remainder, and the quotient will contain the root sought, which in this case is 243. The rule for extracting the cube root is equally tedious, and indeed almost too complex for practical purposes. The methods of extracting the roots of higher powers are so complicated, that they are usually omitted in arithmetical works. The 4th, or biquadratic root, may be ascertained by extracting the square root twice, because it is the square root of the square root. The 6th root is the square root of the cube root, or the cube root of the square root.

The 8th root, being the square root of the biquadratic root, may be found by extracting the square root three times. In the same way, the 9th root may be called the cube root of the cube root, and may be found by extracting the cube root twice. But the common arithmetical operations furnish no method of obtaining the 5th, 7th, 10th, 13th, 14th, 15th, 17th, 19th, 20th, and most other roots; and this part of arithmetic continued, therefore, involved in practical difficulties, until the invention of logarithms.

LOGARITHMS.

Logarithms (from two Greek words, signifying the number of the ratios or proportions) is a branch of arithmetic of comparatively modern invention, the discoverer having been John Napier of Merchiston, near Edinburgh, in the early part of the seventeenth century. The principles upon which logarithms are founded, may perhaps be rendered familiar by the following illustration:—Supposing that 1 is the first term of a geometrical progression, and that the ratio or multiplier is 2, the terms stand in the following manner:—

1	is the first term.
2 ...	ratio.
4 ...	square of the ratio.
8 ...	cube of the ratio.
16 ...	4th power of the ratio.
32 ...	5th power of the ratio.
64 ...	6th power of the ratio.

All this might, however, have been conveyed far more concisely by substituting signs for words, thus:—

1 ...	2^0
2 ...	2^1
4 ...	2^2
8 ...	2^3
16 ...	2^4
32 ...	2^5
64 ...	2^6

It is evident that this might have been expressed still more concisely by omitting the number signifying the ratio (2) throughout, retaining only the indices or exponents, they alone being sufficient to indicate the degree of power to which the ratio is raised in each term. Exponents thus placed in order, opposite to a series of numbers in geometrical progression, are, as we have said, called Logarithms, or literally, *number of the ratio.*

The most tedious sums in multiplication can, by means of logarithms, be solved simply by addition. For instance, if it were required to multiply 256 by 32, it would merely be requisite to add the logarithms standing opposite to those two numbers—their sum (13) stands opposite the product required, namely, 8192:—

Num.	Log.	Num.	Log.
1	0	128	7
2	1	256	8
4	2	512	9
8	3	1024	10
16	4	2048	11
32	5	4096	12
64	6	8192	13

Again, to multiply 128 by 16, we take the 7th + 4th, or 11th, power of 2, because 128 is the 7th and 16 the 4th power of 2; opposite to the sum of 7 and 4 (11) is 2048, equal to the result of the multiplication of the two numbers. This also affords a quick and easy method of dividing one number by another: thus if it be required to divide 4096 by 16, it is only requisite to ascertain the difference between the logarithm of these two numbers, which in this case being 8, the figure opposite to 8 is the required quotient, indicating how often 16 is contained in 4096—namely, 256 times.

The indices or exponents, 1, 2, 3, 4, &c. might, however, denote the powers of any other number or ratio. Every different ratio or geometrical progression gives a different system of logarithms. Soon after the invention of logarithms by Lord Napier, it occurred to Briggs, then professor of geometry at Oxford, that a system whose base or ratio is 10 is preferable to all others, on account of its being analogous to the general method of notation. In A.D. 1624, Briggs published the tables of logarithms which are now in common use. In this system, 10 being the ratio or multiplier, the terms may be thus expressed—

1	10	100	1000	10,000, &c.
10^0	10^1	10^2	10^3	10^4 &c.

The exponents, 1, 2, 3, 4, are, as was shown in the previous table, the logarithms of the opposite numbers, and might therefore have been written thus—

1	10	100	1000	10,000, &c.
0	1	2	3	4 &c.

The logarithms of all intermediate numbers, such as those between 1 and 10, 10 and 100, &c. are found by ascertaining the geometrical mean proportions between any two numbers, and likewise the corresponding arithmetical means between the indices of those numbers. In every system, 0 is the logarithm of 1. Hence the logarithm of any number between 1 and 10 must be less than a whole number, and therefore a decimal fraction; and the logarithm of any number between 10 and 100 must be one with a fraction. In the same way, the logarithm of any number between 100 and 1000 must be 2 and a fraction, and so on, through the rest of the series. The integers, 0, 1, 2, 3, &c. to the left of the decimals in logarithms, are called the *characteristics* of those logarithms. Thus 0 is the characteristic of all numbers between 1 and 10; 1 is the characteristic of all between 10 and 100; 2 that of all between 100 and 1000, &c. In tables of logarithms the characteristics are generally omitted. [For a complete and accurate collection of MATHEMATICAL TABLES, the reader is referred to CHAMBERS'S EDUCATIONAL COURSE.]

The method of using a table of logarithms is the following:—To ascertain, in the most common tables, the logarithm of a number less than 10,000, it is merely necessary to find the first three figures of the number in the left-hand column, and the fourth figure in the horizontal line at the top; then opposite to the former, and under the latter, is the required logarithm. If the given number consist of five figures, find, as before, the logarithm belonging to the first four figures; the difference between it and the next logarithm may be ascertained from the margin; this difference is to be multiplied by the fifth figure of the given number, and one figure cut off from the right of the product; and the other figures of this product being added to the preceding logarithm, and the index 3 prefixed, the sum will be the required logarithm.

The process of finding the natural number of any given logarithm is precisely the converse of that just described. The given logarithm must be sought in the table; and against it, in the left-hand column, will be found the natural number. It has already been shown that tables of logarithms afford an easy method of finding the product in multiplication, and the quotients in division, by means of simple addition and subtraction. Logarithms are equally applicable to the solution of questions in Proportion or the Rule of Three, it being merely requisite to add the logarithms of the second and third terms together, and from the sum to subtract the logarithm of the first: the remainder is the logarithm of the fourth term.

A number may, by means of logarithms, be raised to any required power, by multiplying the logarithm of the number by the index of the power. Thus to square any number, multiply its logarithm by 2; to cube a number, multiply its logarithm by 3; and so on.

To extract the root of any given number, the logarithm of the number must be divided by the proposed

index, and the quotient is the logarithm of the required root. Thus to find the square root of 169, it is only necessary to divide its logarithm, which is 2·2278867 by 2; opposite to the quotient will be found the number 13, which is the square root of 169, because $13 \times 13 = 169$. [To those who desire a thorough knowledge of ARITHMETIC, we refer to the complete and accessible treatise, by Mr Marr, published in CHAMBERS'S EDUCATIONAL COURSE.]

ALGEBRA.

We have seen that logarithmic tables may be used as a substitute for many lengthened operations in arithmetic. It is evident that the value of all methods of computation lies in their brevity. Algebra must be considered as one of the most important departments of mathematical science, on account of the extreme rapidity and certainty with which it enables us to determine the most involved and intricate questions. The term *algebra* is of Arabic origin, and has a reference to the resolution and composition of quantities. In the manner in which it is applied, it embodies a method of performing calculations by means of various signs and abbreviations, which are used instead of words and phrases, so that it may be called the system of symbols. Although it is a science of calculation, yet its operations must not be confounded with those of arithmetic. All calculations in arithmetic refer to some particular individual question, whereas those of algebra refer to a whole class of questions. One great advantage in algebra is, that all the steps of any particular course of reasoning are, by means of symbols, placed at once before the eye; so that the mind, being unimpeded in its operations, proceeds uninterruptedly from one step of reasoning to another, until the solution of the question is attained.

Symbols are used to represent not only the known, but also the unknown quantities. The present custom is to represent all known quantities by the first letters of the alphabet, as a, b, c, &c. and the unknown quantities by the last letters, x, y, z.

The symbols used in arithmetic to denote addition, subtraction, &c. belong properly to algebra. Thus the sign $+$ *plus*, denotes that one quantity is to be added to another, and is called the positive or additive sign; all numbers to which it is prefixed are called *positive*. The sign $-$ *minus*, denotes that one quantity is to be subtracted from another; it is called the negative or subtractive sign, and all quantities to which it is prefixed are called *negative*. If neither $+$ nor $-$ be prefixed to a quantity, then the sign $+$ *plus* is understood.

The general sign to denote that one number is to be multiplied by another, is $\times$; but it often occurs that one letter has to be multiplied by another, and this is represented by placing those letters one after the other, generally according to the order in which they stand in the alphabet; thus a multiplied by b, is expressed by ab. The multiplication of quantities consisting of more than one term, as for instance $a + b$ by $c + d$, may be represented by any one of the following methods: $\overline{a + b} \times \overline{c + d}$, or $\overline{a + b}.\overline{c + d}$, or $(a + b)(c + d)$. The bar drawn over $a + b$ and $c + d$, which in the two first examples marks them as distinct quantities, is called a *vinculum*, but brackets or parentheses, as in the last example, are now in more frequent use.

When a letter is multiplied by any given number, it is usual to prefix that number to the letter. Thus twice a, three times b, four times c, six times x, &c. are expressed thus: $2a$, $3b$, $4c$, $6x$; and the numbers 2, 3, 4, 6, thus prefixed, are called the *coefficients* of the letters before which they stand.

The sign $\div$ between two numbers shows, as in arithmetic, that the former of those numbers is to be divided by the latter; thus $a \div b$, means that a is to be divided by b. It is, however, more usual to place the number to be divided above that by which it is to be divided, with a small line between, in the form of a fraction; thus $\frac{a}{b}$ denotes that a is divided by b.

It has been shown in Arithmetic that the powers of quantities are denoted by a small figure, called the exponent or index of the power. Thus $a \times a$, or the square of a, is expressed by a^2; $b \times b \times b$, or the cube of b, is expressed by b^3, &c. The cube of $a + b$, or of $(a + b)(a + b)$ is expressed thus: $(a + b)^3$.

The roots of quantities are represented by the sign $\sqrt{\ }$, with the proper index affixed; thus $\sqrt[2]{a}$, or, more simply, $\sqrt{a}$, expresses the square root of a; $\sqrt[3]{a}$ the cube root of a; $\sqrt[4]{a + b}$ represents the 4th or biquadratic root of $a + b$. Fractional indices are also frequently used to denote the roots of quantities, thus:

$a^{\frac{1}{2}}$ is the square root of a.

$a^{\frac{1}{3}}$ is the cube root of a.

$a^{\frac{1}{4}}$ is the 4th root of a, &c.

Again, $a^{\frac{2}{3}}$ is the cube root of a^2, or of the square of a.

$a^{\frac{3}{2}}$ is the square root of a^3, or of the cube of a.

$a^{\frac{2}{5}}$ is the 5th root of a^2.

When two or more letters or quantities are connected together by signs, the combination is called an algebraic expression, and each letter or quantity is called a *term*.

Quantities of one term are called simple quantities; as a, $2a$, $3b$, &c.

A quantity of two terms, as $b + c$, is called a *binomial*.

When a binomial expresses the difference between two quantities, it is called a *residual*, as $a - b$.

A quantity consisting of 3, 4, or many terms, are called respectively *trinomials*, *quadrinomials*, *multinomials*.

The sign $=$ placed between two quantities shows, as in arithmetic, the *equality* of those quantities.

When quantities are connected by this sign, the expression is called an *equation*: thus, $2 + 4 = 6$, is an equation; as also, $a + b = c - f$.

The symbol $>$ or $<$ is called that of *inequality*, it being placed between two quantities, of which one is greater than another; the open part of the symbol is always turned towards the greater quantity: thus, $a > b$ denotes a to be greater than b; and $c < d$ denotes d to be greater than c. The sign of difference is $\sim$, only used when it is uncertain which of two quantities is the greater; thus, $e \sim f$ denotes the difference between e and f when it is uncertain which is the greater.

The word *therefore*, or *consequently*, often occurring in algebraical reasoning, the symbol $\therefore$ has been chosen to represent it: thus the sentence, 'Therefore $a + b$ is equal to $c + d$,' is thus expressed in algebra, $\therefore a + b = c + d$.

Like quantities are such as consist of the same letter or letters, or powers of letters: thus, $6a$ and $2a$ are like quantities, and also $4abc$ and $9abc$. *Unlike* quantities are such as consist of different letters; as, $4a$, $5b$, $6ax^2$, $4cd$, which are all unlike quantities.

Addition.

The operation of addition in arithmetic consists, as has been shown, simply in joining or adding several quantities together: thus, $4 + 8 + 7 + 6 = 25$. This same process is always used in algebra, whenever *like* quantities with *like* signs are required to be added: thus, $2a + 3a + 6a = 11a$; and $-7b - 4b - 6b = -17b$. But as it often happens that like quantities which are to be added together have unlike signs, addition has in algebra a far more extended signification than in arithmetic. Thus to add $7a + 4a$ to $8a - 3a$, it is evident that, after $7a + 4a + 8a$ have been added according to the usual method, $3a$ must be subtracted. Hence the general rule for the addition of *like* quantities with *unlike* signs is to add first the coefficients of the positive terms, and then to add those of the negative terms; the less sum must be subtracted from the

greater, and to this difference the sign of the greater must be annexed, with the common letter or letters.

Thus let it be required to add $7a - 3a + 4a + 5a - 6a - 2a$ and $9a$; $25a$ will be found the sum of the positive terms, and $11a$ that of the negative; $11a$ being the less number, must therefore be subtracted from $25a$, the greater, leaving a remainder of $14a$, which is the required amount. The reason of this mode of procedure may be shown by a simple illustration:—As a letter may represent any quantity, let a represent £5; and suppose that a gentleman has in one bank $7a$, or seven five pounds; in another [illegible] $4a$, and in another $9a$, or nine five pounds: let us suppose, too, that his tailor's bill is $6a$, or six five pounds; his baker's $3a$, or three five pounds; and his butcher's $2a$, or two five pounds; it is evident that, to ascertain how much money is really his own, he must first compute the whole value of his property dispersed in the different banks, then the amount of the bills of his creditors, and then find the difference between the two sums by subtracting the less from the greater. When the aggregate of the positive terms is equal to that of the negative ones, the sum of the two quantities will be equal to 0: thus, if a man possesses £2000, and owes £2000, it is evident that when his debts have been deducted from his property, nothing will remain. Unlike quantities can only be added by collecting them in one line, and prefixing the proper sign of each; thus the sum of $3a + 2b + 4c - 2d$ can only be rendered $3a + 2b + 4c - 2d$; this will be evident by reflecting that different letters in the same algebraical expression always represent different quantities, which cannot of course be added into one sum unless their precise value be known. Thus the addition of a and b cannot be represented by $2a$ or $2b$, because that would imply that a is equal to b, which it is not necessarily; neither could it be represented by ab, because ab denotes the multiplication of the two quantities; the only method, then, of expressing these sums is thus, $a + b$. When like and unlike quantities are mixed together, as in the following example, the like quantities must first be collected together according to the method above described, and all unlike quantities must be annexed in order:—

$$\begin{array}{rrr}
9a & + 5xy & - 8ay \\
-8xy & - 10x & + 2xy \\
3x & - 7ay & - 5x \\
5ax & - 6ax & + 11y \\
-xy & - 4a & + 9ax \\
2ay & + 12x & - 2a \\
-10y & - 3xy & + 13ay \\
\hline
3a & - 8ax & - 5xy + y
\end{array}$$

Subtraction.

When two like quantities, having like signs, are to be subtracted the one from the other, the process is precisely the same as that already described in Arithmetic: thus, $3a$ subtracted from $7a$, leaves as a remainder $4a$. From $3a + 5a$ take $6a + 2a$, and the remainder will be $2a + 3a$, or $5a$.

But supposing it were required to subtract $6a - 4a$ from $9a$, it is evident that some other process must be adopted; because if $6a$ be subtracted from $9a$, the proposed operation will not be performed; for it is not $6a$, but $6a - 4a$, that is, $2a$, which is required to be subtracted from $9a$; $6a$ subtracted from $9a$ leaves $3a$, which is $4a$ less than would result from subtracting $2a$ from $9a$; but if to $3a$ we add the other term—namely, $4a$—the sum will be the remainder sought, because $3a + 4a = 7a$; and if $2a$ be subtracted from $9a$, which is just the same question in another form, for $6a - 4a$ is $= 2a$, the remainder is just $7a$, as before. So if $a - b$ is to be subtracted from c, the remainder would be $c - a + b$, and for the same reason. It may therefore be given as a general rule, that all the signs of a quantity which is required to be subtracted from another, must be changed: thus when $4x - 3y$ is subtracted from $7a + 5b$, the remainder is written thus, $7a + 5b - 4x + 3y$.

When like quantities are to be subtracted from each other, it is usual to place them in two rows, the one above the other; the signs of the quantities to be subtracted must, for the reason above adduced, be conceived to be changed; and the several quantities must be added, as shown in the following examples:—

$$\begin{array}{rrrr}
\text{From} & 5ax + & 7xy & - 2y \\
\text{Take} & 3y + & 3ax & - 6xy \\
\hline
\text{Remainder,} & 2ax + & 15xy & - 5y
\end{array}$$

Multiplication.

The multiplication of two quantities is performed by multiplying, as in arithmetic, the coefficients of the quantities, and then prefixing the proper sign and annexing letters: thus the product of $3a$, multiplied by $5b$, is $15ab$, and $7a \times 4ab = 28a^2b$.

When the signs of both quantities are alike, the sign $+$ is to be prefixed; but when unlike, the sign $-$ must be prefixed, which may be thus shown at one view:—

1. $+$ multiplied by $+$ produces $+$
2. $-$ multiplied by $-$ produces $+$
3. $+$ multiplied by $-$ produces $-$
4. $-$ multiplied by $+$ produces $-$

Hence the technical rule generally given is, that 'like numbers produce *plus* $+$, and unlike produce *minus* $-$.' This, however, is not perfectly true when more than two quantities are to be successively multiplied; because, although the product of an even number of negative quantities is positive, yet the product of an odd number of negative quantities is always negative; thus,

$$-a \times -b \times -d = -abd$$
$$\text{and} -a \times -b \times -d \times -e = abde$$

When the same letter occurs in both quantities, the indices must be added; thus, $a^2 \times a^3 = aaaaa = a^5$. In the multiplication of compound quantities, it is usual to commence from the left-hand figure; the multiplication, for instance, of $8ab - 4ac + x$ by $2a$, is thus performed:—

$$\begin{array}{r}
8ab - 4ac + x \\
2a \\
\hline
16a^2b - 8a^2c + 2ax
\end{array}$$

To multiply two compound quantities, each term of the one must, as in arithmetic, be multiplied by each term of the other; these particular or partial products must be added according to the rules of addition, and their sum will give the whole product, as shown in the following instance:—

$$\begin{array}{rr}
\text{Multiply} & 3a + 8b \\
\text{By} & a - b \\
\hline
 & 3a^2 + 8ab \\
 & -3ab - 8b^2 \\
\hline
\text{Product,} & 3a^2 + 5ab - 8b^2
\end{array}$$

Division.

The operations of division being in algebra, as in arithmetic, merely the converse of those of multiplication, the same rules respecting signs apply in both. Thus, $6ab^2$, divided by $2b$, is equal to $3ab$,

$$\text{And} -8cx^2 \div 4x, \text{ or } -\frac{8cx^2}{4x} = -2cx$$

In division, all letters common to both quantities must be omitted in the quotient; and when the same letters occur in both with different indices, the index of the letter in the divisor must be subtracted from that in the dividend; thus,

$$abx \div ab, \text{ or } \frac{abx}{ab} = x; \text{ and}$$

$$6a^5 \div 2a^3, \text{ or } \frac{6a^5}{2a^3} = 3a^2$$

When the exponent of any letter in the divisor exceeds that of the same letter in the dividend, the latter exponent must be subtracted from the former, and the quotient will be in the form of a fraction; thus,

$$-12a^2x^3 \div 8ax^5 = -\frac{12a^2x^3}{8ax^5} = -\frac{3a^2}{2x^2}$$

When the number to be divided is a compound quantity, and the divisor a simple one, then each term of the dividend must be divided separately, and the result will be the answer; thus,

$$\frac{6a + 24ab + 8a^2 + 12ae}{2a} = 3 + 12b + 4a + 6e$$

When the divisor and dividend are both compound quantities, the rule is the same as that of long division in arithmetic. When there is a remainder, it must be made the numerator of a fraction, under which the divisor must be put as the denominator; this fraction must then be placed in the quotient, as in arithmetic. The compound quantities must, however, be previously arranged in a particular way—namely, according to the descending powers of some letter, as of b in the following example; and this letter is called the *leading* quantity. The following is an example of the division of compound quantities:—

$$\begin{array}{l}
b - x)\ b^3 - 3b^2x + 3bx^2 - x^3\ (b^2 - 2bx + x^2 \\
\qquad\quad b^3 - b^2x \\
\qquad\quad \overline{-2b^2x + 3bx^2} \\
\qquad\qquad -2b^2x + 2bx^2 \\
\qquad\qquad\quad \overline{bx^2 - x^3} \\
\qquad\qquad\qquad bx^2 - x^3 \\
\qquad\qquad\qquad \overline{\quad *}
\end{array}$$

Fractions.

The rules regulating the management of fractions in algebra are similar to those in arithmetic.

A mixed quantity is reduced to a fraction by multiplying the whole or integral part by the denominator of the fraction, and annexing the numerator with its proper sign to the product; the former denominator, if placed under this sum, will give the required fraction. Thus the mixed quantity $2x + \frac{5ab}{6e}$ may be thus reduced to a fraction: $2x \times 6e = 12ex$, and as $5ab$ must be added to form the numerator, and the former denominator be retained, the required fraction is the following: $\frac{12ex + 5ab}{6e}$. An operation exactly the reverse of this would of course be requisite were it proposed to reduce a fraction to a mixed quantity. Thus the fraction $\frac{12ex + 5ab}{6e}$ may be reduced to a mixed number by dividing the numerator by the denominator; the numerator of the fractional part must be formed by that term which is not divisible without a remainder; the following is therefore the required mixed quantity: $2x + \frac{5ab}{6e}$. A fraction is reduced to its lowest terms, in algebra as in arithmetic, by dividing the numerator and denominator by any quantity capable of dividing them both without leaving a remainder. Thus in the fraction $\frac{10a^3 + 20ab + 5a^2}{35a^2}$, it is evident that the coefficient of every term can be divided by 5, and as the letter a enters into every term, $5a$ may be called the greatest common measure of this fraction, because it can divide both the numerator and the denominator. The numerator $(10a^3 + 20ab + 5a^2) \div 5a = 2a^2 + 4b + a$; and the denominator, $35a^2 \div 5a = 7a$; hence the fraction, in its lowest terms, is $\frac{2a^2 + 4b + a}{7a}$. Sometimes the greatest common measure of two quantities is not so obvious as in the example just adduced, in which case recourse must be had to the following operation:—The quantity, the exponent of whose leading letter in the first term is not less than that in the other, must first be divided by the other; the divisor must then be divided by the remainder; each successive remainder is made the divisor of the last divisor, until nothing remains; when the divisor last used will be the greatest common measure. Quantities which have no common measure or divisor except 1, are called *incommensurable*; thus 7, 5, 3, and 11, are incommensurable quantities, and are also said to be *prime* to each other. When fractions are required either to be added or to be subtracted, they must necessarily be first reduced to a common denominator, which is effected by multiplying each numerator by every denominator but its own, to produce new numerators, and all the denominators together for the common denominators. The new numerators can then be either added or subtracted according as the case may require, and the new denominator must be left unchanged. Multiplication of fractions is performed by multiplying all the numerators together for a new numerator, and their denominators together for a new denominator; it is then usual to reduce the resulting fraction to its lowest terms. Division of fractions is effected by multiplying the dividend by the reciprocal of the divisor. The reciprocal of any quantity is unity, or 1 divided by that quantity, or simply that quantity inverted; thus the reciprocal of a or $\frac{a}{1}$ is $\frac{1}{a}$, and the reciprocal of $\frac{a}{b}$ is $\frac{b}{a}$; therefore to divide a fraction as $\frac{8a^2}{2}$ by $\frac{4a}{5}$, the dividend $\frac{8a^2}{2}$ must be multiplied by the reciprocal of $\frac{4a}{5}$, which is $\frac{5}{4a}$; therefore $\frac{8a^2}{4} \times \frac{5}{4a} = \frac{40a^2}{16a}$; this last fraction, divided by its greatest common measure $8a$, is the fraction required—namely, $\frac{5a}{2}$.

Involution and Evolution.

The raising of a quantity to any required power is called involution, and is performed by multiplying the quantity into itself as often as is indicated by the given power. When the quantity has no index, it is only necessary to place the given power above it, in order merely to indicate the power: thus the fourth power of a is a^4, and the cube or 3d power of $a + b$ is $(a + b)^3$.

When the quantity has an index, that index must be multiplied by the given power: thus the 4th power of a^2 is a^8, because $2 \times 4 = 8$. If the quantity required to be raised be a fraction, both the numerator and the denominator must be multiplied by the given power: thus the square of $\frac{a^2}{d^3}$ is $\frac{a^4}{d^6}$. When the sign of the quantity is +, then all the powers to which it can be raised must be +; if —, then all the even powers will be +, and all the odd powers —. Thus $x \times x = x^2$; $-a \times -a = +a^2$; $-a \times -a \times -a = -a^3$.

A compound quantity—that is, one consisting of more than one term—is raised to any given power by multiplying it into itself the number of times denoted by the power. This is done according to the method already described in multiplication. Thus the square of $x + 4y$, is thus found:—

$$\begin{array}{r}
\text{Multiply } x + 4y \\
\text{By } \quad x + 4y \\
\hline
x^2 + 4xy \\
4xy + 16y^2 \\
\hline
\text{Square} = x^2 + 8xy + 16y^2
\end{array}$$

The operations of evolution are the reverse of those of involution, being designed to discover the square root, cube root, &c. of any given quantity. The roots of numerical coefficients are found as in arithmetic: thus the square root of $49a^2$, is $7a$, because $7 \times 7 = 49$. The index of the given quantity must be divided by 2 for the square root, by 3 for the cube root, by 4 for the 4th root, &c.: thus the cube root of a^6 is a^2.

The square root of compound quantities may be extracted by a method very similar to that described in arithmetic, and of which an example was there given. The cube root may likewise be extracted by a similar process.

Irrational Quantities, or Surds.

Some numbers have no exact root; for instance, no

number multiplied into itself can produce 5. The roots of such quantities are expressed by fractional indices, or by the sign $\sqrt{}$, which is called the radical sign, from the Latin *radix*, a root: thus the square root of 5, and the cube root of $(a+b)^2$, may be expressed either by $\sqrt{5}$, $\sqrt[3]{(a+b)^2}$, or by $5^{\frac{1}{2}}$, $(a+b)^{\frac{2}{3}}$.

The approximate value of such quantities can be ascertained to any required degree of exactness by the common rules for extracting roots: thus the square root of 2 is 1 and an indefinite number of decimals; but as the exact value can never be determined, the name of *irrational* is given to such quantities, to distinguish them from all numbers whatever, whether whole or fractional, of which the value can be found, and which are therefore termed *rational*. Irrational numbers are generally called *surds*, from the Latin *surdus*, deaf or senseless.

Equations.

When two quantities are equal to each other, the algebraical expression denoting their equality is called an *equation*. Thus $x-2=4+3$ is an equation, denoting that if 2 be deducted from some unknown quantity represented by x, the remainder will be equal to $4+3$, that is, to 7; therefore the value of x in this equation is evidently $7+2$, or 9.

The doctrine of equations constitutes by far the most important part of algebra, it being one of the principal objects of mathematics to reduce all questions to the form of equations, and then to ascertain the value of the unknown quantities by means of their relations to other quantities of which the value is known.

Many problems, which are now quickly and readily determined by being reduced to equations, used formerly to be solved by tedious and intricate arithmetical rules; and they may still be found in old treatises on arithmetic, arranged under the titles of Double and Single Position, False Position, Alligation, &c. Equations receive different names, according to the highest power of the unknown quantities contained in them. An equation is said to be *simple*, or of the *first degree*, when it contains only the first power of the unknown quantity: thus $x+b=35$ $a-2$ is a simple equation, the unknown quantity being represented by x, as it generally is in other equations, and the known quantities by the other letters and figures. $x^2+4=8$ a, is a *quadratic* equation, because x, the unknown quantity, is raised to the second power.

$x^3=a+3$ b is a *cubic* equation, the unknown quantity being raised to the third power.

$x^4-a=25$ c is a *biquadratic* equation, because x is raised to the 4th power. If equations contain unknown quantities raised to the 5th, 6th, or higher powers, they are denominated accordingly.

The quantities of which an equation is composed, are called its *terms*; and the parts that stand on the right and left of the sign $=$, are called the *members* or *sides* of the equation.

When it is desired to determine any question that may arise respecting the value of some unknown quantity by means of an equation, two distinct steps or operations are requisite; the first step consists in translating the question from the colloquial language of common life into the peculiar analytical language of the science. The second step consists in finding, by given rules, the answer to the question, or in other words, the solution of the equation. Expertness and facility in performing the former operation cannot be produced by any set of rules; in this, as in many other processes, practice is the best teacher. Every new question requires a new process of reasoning; the conditions of the question must be well considered, and all the operations, whether of addition, subtraction, &c., which are required to be performed on the quantities which it contains, are to be represented by the algebraic signs of $+$, $-$, &c.: the whole problem must be written down as if these operations had been already performed, and as if the unknown quantities were discovered, which can be done very briefly by substituting the first letters of the alphabet for the known quantities, and the last letters for the unknown, prefixing to each the signs of addition, multiplication, &c. which may be denoted in the question. Thus suppose a farmer wished to divide £1, 15s. between his two sons, allowing 9s. more to the elder than to the younger, what would each receive? To express this question in algebraic language, the share of the younger son may be represented by x, and then that of the elder son will be $x+9$. The steps of reasoning by which this question may be solved, are the following:—The share of the elder + the share of the younger is £1, 15s., equal to 35s.; therefore $x+9+x=35$, or $2x+9=35$ $\therefore$ $2x=35-9$, or $2x=26$ $\therefore$ x (share of the younger son) $=\frac{26}{2}=13$, and $x+9$ (the share of the elder son), $=13+9=22$.

The second operation in determining a question may be said to consist in contrivances to get x, or the unknown quantity, to stand alone on one side of the equation, without destroying the equality or balance between the two sides; because in such an equation, for instance, as the following, $x=4+2$, the value of x is at once seen; if 6 were to be put in the place of x, the equation would be said to be *fulfilled*, because then it would stand thus, $6=6$; therefore 6 is the *root* or solution of the equation, $x=4+2$. In some questions, the unknown quantity is so much involved with known quantities, that it is often a difficult, although always a highly-interesting process, to separate it from them. Many rules for effecting this are given in most algebraical treatises, but they may all be comprised in one general observation—namely, that any operation, whether of addition, subtraction, &c. may be performed on one side of an equation, provided only that the very same operation be performed on the other side, so as not to destroy their equality. Thus in the equation $x+5=12$, it is evident that if 5 could be removed from the left to the right side of the equation, x would stand alone, and its value at once be ascertained; it having been already stated that any operation may be performed on one side of the equation, provided only the same operation be performed on the other, it follows that 5 may be subtracted from the left side, if subtracted likewise from the right; therefore $x+5-5=12-5$; but $5-5$ being equal to 0, the equation would more properly be expressed thus, $x=12-5$; that is to say, the value of x is 7. Again, in the equation $x-10=27$, add 10 to each side of the equation; then $x-10+10=27+10$; but $-10+10=0$; therefore $x=27+10$. When the same quantity is thus subtracted from both sides of an equation, or added to both sides, the operation is technically, though perhaps incorrectly, termed '*transposing* quantities from one side of an equation to the other.'

The reason why the same operation performed upon both sides of an equation does not alter their equality, is simply because 'if equal quantities be added to, or subtracted from, equal quantities, the value of the quantities will still be equal.' To illustrate this—supposing a wine-merchant has 2 casks of wine, each cask containing 36 gallons, it is evident that if he draws off the same number of gallons from each cask, the quantity of gallons remaining in each cask will still be equal; so, if he were to replace the same number of gallons of wine in each cask, the number of gallons contained in each would still be equal to each other. For the same reason, if the two sides of an equation were either multiplied or divided by the same number, their equality to each other would still remain: in the equation $3x=27$, the value of x may be discovered by dividing both sides of the equation by its coefficient 3; thus $\frac{3x}{3}=\frac{27}{3}$; but $\frac{3x}{3}=x$, and $\frac{27}{3}=9$; $\therefore x=9$. In the same way, if the unknown quantity in an equation is required to be divided by some known quantity, each side of the equation may be multiplied by the divisor.

Thus in the equation $\frac{x}{4} = 32$, if each member be multiplied by 4, the result will be $x = 32 \times 4 = 128$. This is technically called clearing an equation of fractions.

On Simple Equations Containing two or more Unknown Quantities.

It may be given as a general rule, that when a question arises as to the value of two or more unknown quantities, each of these quantities must be represented by one of the last letters of the alphabet, and as many separate equations must be deduced from the question as there are unknown quantities. A group of equations of this kind is called a *system of simultaneous equations*.

If it be required to solve a system of two simple equations, containing two unknown quantities, the most natural method seems to be to determine first the value of one of the unknown quantities by means of both the equations. Then as 'things which are equal to the same thing are equal to each other,' it follows that the two sets of numbers or letters in the two equations, which have been ascertained to be equal to the value of x, will also be equal to each other, and may be reduced to an equation, which will contain only one unknown quantity. This process is technically called *elimination*. Let it, for instance, be required to find the length of two planks of wood: the length of both planks together is 20 feet, and one plank is 8 feet longer than the other plank. This is evidently a question involving two unknown quantities—namely, the length of each of the two planks of wood. To translate this question into algebraical language, call the longer plank x, and the shorter plank y, then the facts above-mentioned may be thus stated: $x + y = 20$, and $x - y = 8$. The value of x may be ascertained by means of both the equations in the following manner:—

The first equation gives $x = 20 - y$
And the second, $x = 8 + y$

The two values of x, thus ascertained, must form a new equation, thus:—

$$20 - y = 8 + y$$
$$20 = 8 + 2y$$

So that it is evident from this last equation, that $2y$ is equal to 12, because $20 - 8 = 12$; therefore $y = 6$, and $20 - 6 = 14$. The length of both the planks is thus ascertained, the longer being 14 feet in length and the shorter 6 feet.

This problem is not only given as an example of *elimination*, but also as an illustration of the general theorem, that 'the greater of two numbers is equal to half their sum, *plus* half their difference; and that the less number is equal to half the sum, *minus* half the difference.' Thus the above question might have been solved in the following manner:—

$$\frac{20}{2} + \frac{8}{2} = 14, \text{ and } \frac{20}{2} - \frac{8}{2} = 6$$

The following is the method of demonstrating this curious theorem algebraically:—Let a and b be any two numbers of which a is the greater, and let their sum be represented by s, and their difference by d;

$$\text{Then } a + b = s$$
$$\text{and } a - b = d$$
$$2a = s + d$$
$$\text{and } a = \frac{s}{2} + \frac{d}{2}$$
$$\text{Also } 2b = s - d$$
$$\text{and } b = \frac{s}{2} - \frac{d}{2}$$

Quadratic Equations.

A quadratic equation literally means a *squared equation*, the term being derived from the Latin *quadratus*, squared; a quadratic equation, therefore, is merely an equation in which the unknown quantity is squared or raised to the second power. Quadratic equations are often called equations of two dimensions, or of the second degree, because all equations are classed according to the index of the highest power of the unknown quantities contained in them.

There are two kinds of quadratic equations—namely, pure and adfected. *Pure* quadratic equations are those in which the first power of the unknown quantity does not appear: there is not the least difficulty in solving such equations, because all that is requisite is, to obtain the value of the square according to the rules for solving simple equations, and then, by extracting the square root of both sides of the equation, to ascertain the value of the unknown quantity. For instance, let it be required to find the value of x in the equation $x^2 + 4 = 29$. By deducting 4 from each side of the equation, the value of x^2 is at once seen to be as follows: $x^2 = 29 - 4 = 25$; the square root of both sides of this equation will evidently give the value of x, thus $x = \sqrt{25} = 5$. *Adfected* or *affected* quadratic equations are such as contain not only the square, but also the first power of the unknown quantities.

There are two methods of solving quadratic equations; we are indebted to the Hindoos for one of these methods, of which a full account is given in a very curious Hindoo work entitled 'Bija Ganita.' The other method was discovered by the early Italian algebraists. The principle upon which both methods are founded is the following:—It is evident that in an adfected equation, as, for instance, $ax^2 + bx = d$, the first member, $ax^2 + bx$, is not a complete square; it is, however, necessary for the solution of the equation that the first side should be so modified as to be made a complete square, and that, by corresponding additions, multiplications, &c. the equality of the second side should not be lost; then by extracting the square root of each side, the equation will be reduced to one of the first degree, which may be solved by the common process.

The following illustration from Bridge will perhaps tend more to simplify the subject, and show its practical utility, than any mere abstract rules which might be advanced. A person bought cloth for £33, 15s., which he sold again at £2, 8s. per piece, and gained by the bargain as much as one piece cost him. Required the number of pieces.

Let x = the number of pieces, £33, 15s. × 20 = 675; therefore $\frac{675}{x}$ = the number of shillings each piece cost, and $48x$ is equal to the number of shillings for which he sold the *whole*, because £2, 8s. or 48 shillings was the price he obtained for each piece. Therefore $48x - 675$ was what he gained by the bargain. Hence, by the question, $48x - 675 = \frac{675}{x}$. This equation, after having been submitted to the usual operations of transposition and division which have been already described, assumes the form of

$$x^2 - \frac{225}{16}x = \frac{225}{16}.$$

The next step is to complete the square; this is done by adding to each side of the equation *the square of half the coefficient of the second term.*

$$x^2 - \frac{225}{16}x + \left(\frac{225}{32}\right)^2 = \frac{225}{16} + \frac{50625}{1024} = \frac{65025}{1024};$$

then extracting the square root,

$$x - \frac{225}{32} = \frac{225}{32} \text{ and } x = \frac{480}{32} = 15.$$

Therefore 15 pieces of cloth was the quantity sold.

It is often requisite, for the more easy solution of equations, to change them into other equations of a different form, but of equal value; and this is technically termed Transformation. Our limits will not permit us to enter on any explanation of this rule, or of the rules farther advanced in the science, as Permutations, Undetermined Coefficients, Binomial Theorem, Exponential Equations, &c. To those who desire to possess a more extensive knowledge of Algebra, we refer to the complete and accessible treatise of Mr Bell, in CHAMBERS'S EDUCATIONAL COURSE.

GEOMETRY.

Geometry (from two Greek words signifying the *earth* and *to measure*) is that branch of mathematical science which is devoted to the consideration of form and size, and may therefore be said to be the best and surest guide to the study of all sciences in which ideas of dimension or space are involved. Almost all the knowledge required by navigators, architects, surveyors, engineers, and opticians, in their respective occupations, is deduced from geometry and other branches of mathematics. All works of art are constructed according to the rules which geometry involves; and we find the same laws observed in the works of nature. The study of mathematics, generally, is also of great importance in cultivating habits of exact reasoning; and in this respect it forms a useful auxiliary to logic. As will be observed even from the short sketch which we are able to present, the steps of reasoning from given and exact premises are clear and undeniable, and the results satisfactory. All subjects, it is true, are not susceptible of being brought to the test of mathematical analysis; but to one acquainted with the process, no fantastic speculations or loose points in any argument will be accepted as proved truths, or passed over without an attempt at refutation. 'The student of mathematics,' says Dr Whewell, 'is accustomed to a chain of deduction, where each link hangs upon the preceding; and thus he learns continuity of attention and coherency of thought. His notice is steadily fixed upon those circumstances only in the subject on which the demonstrativeness depends; and thus that mixture of various grounds of conviction, which is so common in other men's minds, is rigorously excluded from his. He knows that all depends upon his first principles, and flows inevitably from them; that however far he may have travelled, he can at will go over any portion of his path, and satisfy himself that it is legitimate; and thus he acquires a just persuasion of the importance of principles on the one hand, and on the other of the necessary and constant identity of the conclusions legitimately deduced from them.'

It has been frequently asserted, though apparently with little truth, that geometry was first cultivated in Egypt, in reference to the measurement of the land. Thales of Miletus, who lived about 600 B.C., is among the first concerning whose attainments in mathematical knowledge we have any authentic information. About two centuries later, the Platonic school was founded, which event is one of the most memorable epochs in the history of geometry. Its founder, Plato, made several important discoveries in mathematics, which he considered the chief of sciences. A celebrated school, in which great improvement was made in geometry, was established about 300 B.C. To this school the celebrated Euclid belonged. After this period geometrical science, like all general knowledge, gradually declined; and such continued to be the case until about a century after, when it revived among the Arabians.

About the beginning of the fifteenth century geometry, as well as all other departments of knowledge, became more generally cultivated. In modern times, Kepler, Galileo, Tacquet, Pascal, Descartes, Huygens of Holland, our own Newton, Maclaurin, Lagrange, and many others, have enlarged the bounds of mathematical science, and have brought it to bear upon subjects which, in former ages, were considered to be beyond the grasp of the human mind.

As improved by the labours of mathematicians, geometrical science now includes the following leading departments:—Plane Geometry, the basis of which is the Six Books of Euclid's Elements; Solid and Spherical Geometry, Spherical Trigonometry, the Projections of the Sphere, Perpendicular Projection, Linear Perspective, and Conic Sections. But to these main branches of the science there are added Practical Mathematics, which may be defined as an elaboration of the abstract doctrines and rules of general mathematics in application to many matters of a practical nature in the business of life. For example, among the branches of Practical Mathematics we find Practical Geometry, Trigonometry, Measurement of Heights and Distances, Levelling, Mensuration of Surfaces, Mensuration of Solids, Land-Surveying, Calculations of Strength of Materials, Gauging, Projectiles, Fortification, Astronomical Problems, Navigation, Dialling, &c. In such a limited space as the present sheet it would be altogether impossible to present even a mere outline of these numerous branches of general and practical mathematics; and all we propose to do is, to offer a sketch of a few leading features of the science, in order to show what is meant by various terms in common use, and also to incite the reader to a regular course of study.

DEFINITIONS OF TERMS AND FIGURES.

In common language, the extremity of any sharp instrument, such as an awl, a pencil, or a penknife, is called a point. A small mark or dot made with such an instrument on wood or paper would also be called a point; but if examined with a magnifying-glass, it would appear an irregular spot, having length and breadth. A *geometrical point*, on the contrary, has neither length nor breadth, and may be called an imaginary dot.

The extremities or ends of lines are always considered to be points; and when two lines intersect—that is, cross each other—the intersection is called a point.

The definition always given in geometry of a *line* is, that it is *length without breadth*. It is therefore evident that a true geometrical line cannot be constructed; for however finely a line may be drawn, it will be always found to have some breadth; this will at once appear by examining it through a microscope.

In practical geometry it is necessary to draw points and lines; but it is impossible to approach to mathematical exactness unless they be drawn as finely as possible—always bearing in mind that such lines and points are merely *symbols* of the true geometrical lines and points to which our reasoning refers.

A *superficies* or *surface* has only length and breadth, and is bounded by lines. By the word surface is generally understood the outside of anything; as, for instance, the exterior of the lid or of the sides of a box. It is also used in geometry to convey the very same idea, always supposing that it has no thickness.

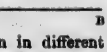
A geometrical surface, like a line and a point, cannot be constructed. The thinnest sheet of paper is not a superficies, but a solid, having the three kinds of bulk technically called dimensions, which are possessed by a solid body—namely, length, breadth, and thickness.

Solids are bounded by surfaces. Geometry considers the dimensions of space as abstracted or separated from any solid body which might occupy that space: a body always occupies a space exactly equal to itself in magnitude. This will be better understood by imagining a cast to be taken of some solid body: when the body is removed, a cavity remains, and we can reason concerning the dimensions of that cavity, knowing that it is of the same length, breadth, and thickness, as the solid body from which it was cast. In this way we reason concerning the dimensions of any given space, and with the same precision as if geometrical lines, surfaces, and solids, were really drawn in that space; and it is the business of theoretical geometry to examine the properties and relations of these forms or magnitudes. We learn from practical geometry how to form representations of the ideas thus acquired. Therefore

the common meaning usually attached to the words *point, line, surface*, and *solid*, is admissible in practical geometry; the object of this branch of science being to show how to draw upon paper, or construct in wood or metal, correct representations of those forms or magnitudes which are conceived to exist in space.

As there are three kinds of magnitudes—lines, surfaces, and solids—it follows that the natural division of the science of geometry is into three primary departments—namely, 1. Geometry of Lines; 2. Geometry of Surfaces; 3. Geometry of Solids, or Solid Geometry. The term *Plane Geometry*, however, is usually applied to the geometry of straight lines, rectilineal figures, and circles described on a plane.

Lines are named by two letters placed one at each extremity. Thus the line drawn here is named the line A B.



It is obvious that lines can be drawn in different ways and in various directions. A line can be crooked, curved, mixed, convex, concave, or straight.

1. A *crooked* line is composed of two or more straight lines.

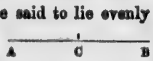
2. A line, of which no part is a straight line, is called a *curved line, curve line*, or *curve*.

3. A *mixed line* is a line composed of straight and curved lines.

4. A *convex* or *concave* line is such that it cannot be cut by a straight line in more than two points; the *concavity* of the intercepted portion is turned towards the straight line, and the *convexity* from it.

A straight line is in geometry called a *right* line, from the Latin *rectus*, straight. If two lines are such, that when any two points in the one touch or coincide with two points in the other, the whole of the lines coincide, each of them is called a *straight* or *right* line. Thus a line which has been carefully ruled on a sheet of paper will be found to coincide with the edge of a ruler.

A straight line, therefore, may be said to lie evenly between its extreme points. If a straight line, as A B, turn round like an axis, its two extremities A and B remaining in the same position, any other point of it, as C, will also remain in the same position.



Any point in a line is called a *point of section*, and the two parts into which it divides the line are called *segments*. Thus the point C in the above line A B is a point of section, and A C, B C are segments.

It is evident that two straight lines cannot enclose a space; and that two straight lines cannot have a common segment, or cannot coincide in part without coinciding altogether.

A surface may be concave, like the inside of a basin; convex, like the exterior of a ball; or plane, like the top of a flat table. A plane superficies, or, as it is commonly called, a *plane*, is considered to be perfectly even, so that if any two points are taken in it, the straight line joining them lies wholly in that surface. This cannot perhaps be better illustrated than by placing two flat panes of glass the one above the other. If the two surfaces coincide exactly in every part, they may be said to form a geometrical plane; and it is upon a plane equally flat and even that all geometrical lines and figures in plane geometry are supposed to be drawn.

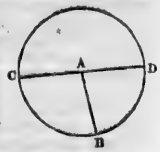
The Circle.

A figure is a part of space enclosed by one or more boundaries; if these boundaries are superficies, it is called a *solid*; and if lines, it is called a *plane* figure, in plane geometry.

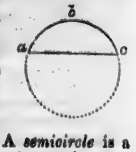
The space contained within the boundary of a plane figure is called its *surface*; and the quantity of surface, in reference to that of some other figure with which it is compared, is called its *area*.

The circle is one of those figures which are most used in the arts and in practical geometry, and therefore claims particular attention. When a line is made to turn round one of its ends or extremities which remains fixed, the extremity which is carried round the other traces a line which is in every part equally distant from the point where the other end is fixed. The line thus traced is a *circle*, and is frequently termed the *circumference*, from the Latin *circum*, round, and *ferens*, carrying.

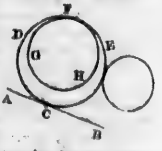
A pair of compasses are generally used in practical geometry to describe a circle. They consist of two straight and equal legs, generally of brass or iron, and always pointed at the bottom. Their upper extremities are joined together by a rivet or joint, so that they can be opened or closed at pleasure. In order to draw a circle, one end must be firmly fixed, and the other, after being opened proportionately to the required size of the circle, must be made to turn completely round, and a pencil or pen being attached to it, the trace of the circle is left upon the paper. The point in which one of the legs of the compasses is fixed, and round which the circle is described, is called its *centre*, as A. A straight line, as AB, drawn from the centre to the circumference of a circle, is called a *radius*, which is a Latin word literally signifying a ray, and of which the plural is radii. A common wheel affords one of the most familiar examples of a circle. The axle is the *centre*, and the spokes are *radii*, while the outer rim of the wheel may be called the *circumference*. It is evident that all the spokes are of equal length; and this is invariably the case with the radii of every circle. A straight line, drawn through the centre of a circle, and terminated at each extremity by the circumference, is called a *diameter*, from the Greek *dia*, through, and *metreo*, I measure. Thus CD is a diameter of the preceding circle.



An *arc* of a circle is any part of the circumference, as *a b c*; the *chord* of an arc is a straight line joining its extremities, as *a c*. These two words come from the Latin words *arcus*, a bow, and *chorda*, a string, because, as is shown by the annexed figure, a geometrical arc with its chord closely resembles a bow to which a string has been attached for the purpose of shooting. A rainbow is a beautiful example of an arc. A *semicircle* is a segment, having a diameter for its chord, and therefore is just half of a circle.



When a chord is lengthened, and made to extend beyond the boundaries of a circle, it is said to *cut* the circle, and is therefore called a *secant*, from the Latin *secans*, cutting. A straight line, AB, which lies wholly *outside* the circle, meeting it only in one point, is called a *tangent*, from the Latin *tangens*, touching, because it is said to touch the circle in the point C. If the line AB were to remain fixed, and if the circle CDE were made to revolve round a point in its centre, in the same way, for instance, as a fly-wheel turns, it would be found that no part of the line AB would be touched by the circle, except the one point C. This property of the circle has been turned to account in various ways. Thus the grindstone used for sharpening knives is a circle made to revolve on its centre; the blade of the knife is held as a *tangent* to this circle; and therefore each time that the grindstone is turned round, it rubs against the blade, producing a finer edge, and giving it a polished appearance.



Circles are said to *touch* one another when they meet, but do not cut one another. Circles that touch one another, as the circle CDE and FGH in the last figure, are called tangent circles.

The point in which a tangent and a curve, or two

tangent circles meet, is called a *point of contact*. When of two tangent circles one is within the other, the contact is said to be *internal*; but when the one is without the other, the contact is said to be *external*. (See figure.) Tangent circles are very frequently applied to useful purposes in various arts and manufactures. The wheels of a watch are merely so many tangent circles. When, by means of the mainspring, one of the circles is made to revolve, its motion causes the wheel which touches it to move also, and the motion of that tangent circle causes the wheel which touches it to move likewise; and in this way motion is transmitted or carried through the watch. It will be observed, on examining the inside of a watch, that the circumference of each wheel is indented or toothed; when the watch is going, the teeth of one wheel enters into the indentations of the other, and thus the one wheel is carried round by the other.

Concentric circles are circles within circles, having the same centre, *c*. A stone thrown into water produces a familiar instance of concentric circles; the waves at first rush in to supply the place of that portion of water which was displaced by the stone, and then, by rapidly flowing back, several circles are formed, one within the other, on the surface of the water; and though these circles are of very various sizes, some being large, and others small, yet the spot in which the stone fell is alike the centre of all, and therefore they are called *concentric* circles.

Circles that have not the same centre are called *eccentric*, in reference to each other, from the Latin *ex*, out of, and *centrum*, centre. A point which is not the centre of a circle may also be called eccentric in reference to that circle.

Circles are called *equal* when their radii are equal in length, because it necessarily follows that the circumference is also equal: thus the two wheels of a gig are obviously equal circles, and the spokes or *radii* of one are equal to those of the other.

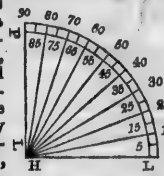
The circle, as we shall hereafter have occasion to show, is of much importance in many operations of practical geometry, and is therefore divided into 360 equal parts, called *degrees*. It would, however, have been possible to have divided the circle into any other number of degrees; the reason why the number 360 was originally fixed upon is the following:—During the early ages of astronomy the sun was supposed to perform an annual revolution round the earth, while the earth remained perfectly stationary. The first astronomers taught that the orbit or path in which they imagined the sun to move was a circle, and that the period which elapsed from the moment of his leaving one point in this circle until he returned to it again was precisely 360 days. Accordingly, all circles were divided into 360 degrees.

When it was discovered that the earth moves round the sun, and that she performs an entire revolution, not in 360 days, but in 365 days 6 hours 48 minutes 48 seconds, it was not thought advisable to alter the division of the circle which had previously been established, because the number 360 is found of great convenience in all lengthened calculations, there being many numbers by which it can be divided without a remainder, as 1, 2, 3, 4, 5, 6, 8, 9, 10, 12, 15, 20, &c.

Each of the 360 degrees is subdivided into 60 minutes, and each minute into 60 seconds. The degree is marked thus (°); the minute (′); the second (″); so that to express 14 degrees 7 minutes 5 seconds we have only to write 14° 7′ 5″. Sometimes the second is again divided into sixty equal parts, called tierces, or thirds, which division is expressed by the sign (‴); but more frequently decimals are used to express the smaller divisions.

The French divide the circle into 400 equal parts, called degrees; each degree into 100 minutes, and each minute into 100 seconds. When this division is used by English writers, they generally give the name of *grades* to the degrees. One grade is equal to 0°·9, or to 54′, or to 3240″.

A circle, as we have just observed, being divided by mathematicians into 360 degrees or parts, it follows that the quarter of a circle includes 90 degrees. Taking, then, a quarter of a circle, and marking it as in the adjoining figure, HL is the horizontal line, and PL the perpendicular line ascending from it. Any line drawn from the centre to any point of the circumference defines the degree of inclination, or slope off the horizontal.



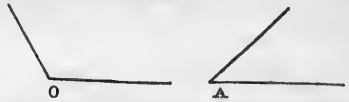
Thus a line ascending from the centre to the 10th degree, is called an inclination or angle of ten degrees; a line ascending to the 45th degree is called an inclination or angle of forty-five degrees; and so on with all the other degrees to the 90th. In this manner a standard of comparison has been established for defining the various slopes or inclinations in planes.

Angles.

Every one is familiar with the meaning of the word *corner*; we are accustomed to call those parts of a room in which the walls meet the '*corners* of the room,' and in the same way, the sharp point in which two sides or edges of a table meet is also called a corner. The very same idea suggested by the word *corner* is admitted into geometry, only the word itself is dropped, and the word *angle* substituted, simply because the Latin for corner is *angulus*.

By an *angle*, therefore, we are to understand the inclination or opening of two straight lines that meet, but are not in the same straight line. The two lines which thus form an angle are called the *sides* of that angle. In the above figure of the quadrant, or quarter circle, we have an example of a right angle in the corner formed by the junction of the horizontal and upright lines.

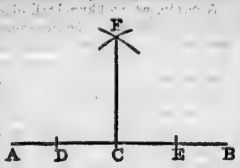
An angle which is greater than a right angle, or more than 90 degrees (as O), is called an *obtuse angle*, from the Latin *obtusus*, blunt, because the vertex or angular point has a blunt appearance.



An angle which is less than a right angle, or less than 90 degrees (as A), is called an *acute angle*, from the Latin *acutus*, sharp, from the vertex being sharp-pointed. The number of degrees by which an obtuse angle exceeds, or by which an acute angle is less than a right angle, is called the *complement* of the angle.

The two lines which form a right angle are said to be *perpendicular* to each other; therefore, whenever a perpendicular is raised either on the ground or on paper, a right angle is formed. Thus the walls of houses and of all architectural edifices are perpendicular, and form right angles with the ground on which they are built; and when the perpendicular is departed from, as in the Leaning Tower of Pisa, the eye is offended, and an apprehension of danger excited in the mind. It is not, however, essential that a perpendicular line should be vertical—that is to say, in the same direction as a weight falls when suspended by a string: a perpendicular may be in an inclined, or even in a horizontal position, provided only that it form an angle of 90 degrees with the line to which it is perpendicular. It is so often requisite in practical geometry to erect a perpendicular, that an instrument called a Carpenter's Square has been invented for the purpose. It consists merely of two flat rulers placed at right angles to each other. As, however, instruments of this description are often made with great inaccuracy, and as it is not, besides, always possible in certain situations to have one

at hand, the following methods of raising a perpendicular on a given line, and from a given point, will be found very useful.

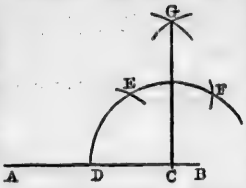


Let AB be the given line, and C the given point.

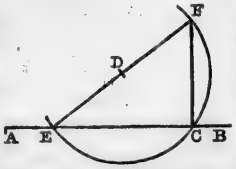
Case 1.—When the point is near the middle of the line.

On each side of C lay off equal distances, CD, CE; and from D and E as centres, with any radius, describe arcs intersecting in F; draw CF, and this is the required perpendicular.

Case 2.—When the point is near one of the extremities of the line.

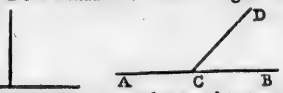


Method 1.—From C as a centre, with any radius, describe the arc DEF, and from D lay off the same radius to E, and from E to F; then from E and F as centres, with the same or any other radius, describe arcs intersecting in G; draw GC, and it will be perpendicular to AB.



Method 2.—From any point D as a centre, and the distance DC as a radius, describe an arc ECF, cutting AB in E and C; draw ED, and produce it to cut the arc in F; then draw FC, and it is the perpendicular.

The angles made by a straight line falling on another straight line are either two right angles, or are together equal to two right angles. The first of the annexed figures presents an example of two right angles being formed by the meeting of two straight lines. In the second figure it is evident that the angle ACD contains exactly as many degrees more than a right angle as the angle DCB contains less than a right angle:



therefore the two angles are together equal to two right angles. Each of these angles is said to be the *supplement* of the other, from the Latin *suppleo*, 'I fill up what is deficient,' because the numerical value of each angle is exactly what the other wants of 180 degrees, which is the sum of two right angles. Equal angles have therefore invariably equal supplements; and it is scarcely necessary to add, that all angles having equal supplements must be equal.

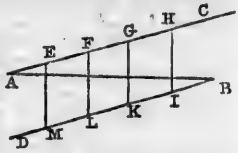
From this it follows that when two straight lines cross, the opposite angles are equal. The angles AEC and DEB are called *vertical angles*, because they are opposite to each other; they are evidently equal, simply because they have equal supplements, as will at once be seen by a careful examination of the figure. The same is true of the angles CEB and AED. It is manifest from this, that if two straight lines cut one another, the angles which they make at the point of their intersection are together equal to four right angles. Hence all the angles made by any number of lines meeting in one point are together equal to four right angles.

Parallel Lines.

We are surrounded by familiar examples of lines which always preserve the same distance from each other. The ruts made in a muddy road by the wheels of a cart, the iron bars called *rails* of a railway, upon which the wheels of the steam-carriages run, the five lines upon which the characters of music are drawn, the strings of a harp, &c. are all so many instances of lines which are always equidistant from each other; and which, even if prolonged to an infinite extent in the same direction, could never meet. Such lines are in geometry called *parallels*, from the Greek words *para*, beside, and *allelon*, each other.

As the distance between any two parallel lines is always equal at every point, it follows that perpendiculars drawn between such lines must also be equal. Thus in architecture, the columns which support the upper part of a building are made of equal height, because the roof which they support is parallel with the base from which they are erected. From the fact that parallel lines cut other lines proportionally, results a mode of dividing a given line into any number of given parts.

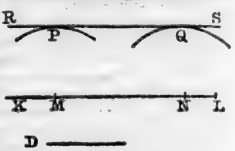
Let AB be the given line, and let the number of equal parts be five.



Method 1.—Draw a line AC through A at any inclination to AB, and through B draw another line BD parallel to AC; take any distance AE, and lay it off four times on AC, forming the equal parts AE, EF, FG, GH; lay off the same distance four times on BD in the same manner; draw the lines HI, GK, FL, and EM, and they will divide AB into five equal parts. For AB, AH, and BM are cut proportionally.

In this figure the lines AC and DB being parallel, the parallel lines EM, FL, &c., are equal; and by them the straight line AB is divided into equal parts. In practical geometry, the method of drawing a line parallel to a given line, and at a given distance from it, depends on the fact, that the parallel lines are everywhere equidistant, and is the following:—

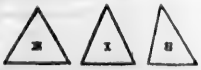
Let KL be the given line, and D the given distance.



From any two points M and N in KL as centres, and a radius equal to D, describe the arcs P and Q; draw a line RS to touch these arcs—that is, to be a common tangent to them—and RS is the required line parallel to AB.

Triangles.

The triangle is one of the most useful figures in geometry: all figures which are bounded by straight lines are capable of being resolved or divided into triangles. A triangle has three sides, and also, as its name imports, three angles.



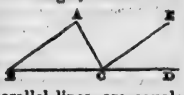
A triangle (as E) in which the three sides are equal, is called *equilateral*, from the Latin *æquus*, equal, and *latus*, a side. Such a triangle is also called *equiangular* (from *æquus*, equal, and *angulus*, corner), because when the sides of a triangle are equal, the angles likewise are invariably equal.

A triangle (as I) having two equal sides, is called *isosceles*, from the Greek *isos*, equal, and *skelos*, leg.

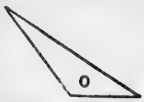
In a *scalene* triangle (as S) the three sides are of unequal length. The word *scalene* literally means unequal, being derived either from *skazo*, to limp, or from *skalenos*, unequal.

One of the most important properties of triangles is, that the three angles are together equal to two right angles. This fact is demonstrated in the following manner:—Draw a triangle, as ABC, and extend one of

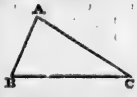
its sides (BC) as far as D. The obtuse angle thus formed (ACD) is called an *exterior* angle, because it is outside the triangle. From the point C draw a straight line to E, parallel to the line AB. It is an established fact, that all alternate angles formed by a straight line cutting two parallel lines, are equal; the angles BAC, ACE are alternate, because they are formed by the straight line AC cutting the two parallel lines AB and CE, and are therefore equal. It is evident that the angles ABC and ECD are equal, because the line AB, which forms a side of one angle, is parallel to the line CE, which forms a side of the other; and the other side of each angle is made by the same line—namely, BD; and an angle being the inclination of one line to another, it is obvious that whenever, as in this case, the inclination of the lines is equal, the angles likewise must be equal. Having now proved that the obtuse exterior angle ACD is equal to the two interior and opposite angles CAB, ABC, we have merely to add ACB, the only remaining angle of the triangle, to the angle ACD; and the angles ACD, ACB will be found equal to the three angles CBA, BAC, ACB; but the angles ACD, ACB are equal to two right angles, because, as has been already stated, the angles made by one straight line falling upon another, are either two right angles, or are together equal to two right angles; therefore the angles CBA, BAC, ACB are equal to two right angles, or 180 degrees.



There are several very useful conclusions to be deduced from this property of triangles. 1. There can only be one right angle in a triangle; for if one angle is 90 degrees, the other angles can only be together equal to 90 degrees; one must be the complement of the other, or what the other wants 90 degrees. A triangle which has a right angle is called a *right-angled* triangle, as R. The side opposite the right angle is called the *hypotenuse*. 2. It is equally obvious that a triangle cannot contain more than one obtuse angle. Fig. O is an *obtuse-angled* triangle. 3. All the angles of a triangle may be acute, as A, which is called an *acute-angled* triangle. 4. When two angles of a triangle are known, or even the sum of those angles, the third may be easily discovered; for if the sum of two angles be deducted from 180 degrees, the remainder must be the number of degrees of which the third angle consists.



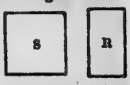
Another property of triangles is, that the greater angle of every triangle has the greater side opposite to it. In the annexed triangle, the angle ABC is greater than the angle BCA. The side AC, being opposite to the larger angle, is longer than the side AB, which is opposite to the smaller angle. There is a kind of natural geometry in the mind even of an uneducated person, according to which he acts without much reflection. Supposing that an untaught peasant had to ascend to the summit of a mountain, he would not commence his ascent from a point where the mountain forms the greatest angle with the ground, and is therefore most precipitous; he would, on the contrary, take the more circuitous road along the opposite side of the mountain, as if he were aware of the property of triangles which has been last mentioned—namely, that the largest angles are subtended by the longest sides.



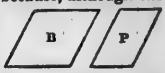
Quadrilateral Figures.

Quadrilateral, or literally four-sided figures, are sometimes called *quadrangles*, because they have four angles; they may be divided into two classes:—1. Those in which all the opposite sides are parallel; and, 2. Those in which all the opposite sides are not parallel. Those belonging to the first class are called *parallelograms*, and may be farther subdivided into two divisions—namely, those which contain four right angles, and to which the generic name of *rectangle* has consequently been applied; and *secondly*, those which do not contain any right angles, two of the angles being obtuse and two acute.

A square is the most useful of quadrilateral figures. Having four right angles, it is called a *rectangle*; and all the sides are of equal length. The figure S is a square. The annexed figure R may be called with equal propriety a parallelogram, a rectangle, or an oblong; it will be observed that its sides are not all equal, its length being greater than its breadth. In speaking of a rectangle, it is often found convenient to name it by the lines which compose its base and height, and it is called the rectangle under or contained by these lines.



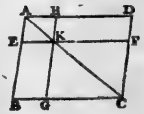
A *rhombus* or *lozenge*, and a *rhomboid*, form the second division of the first class; because, although the sides are parallel, the angles are not right angles. A rhombus has all its sides equal, as B. In a rhomboid, the opposite sides only are equal, as P; the length being either greater than the breadth, or *vice versâ*.

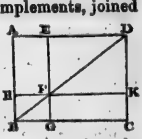


A *trapezoid* has only two sides parallel, as D. When the sides of a trapezoid that are not parallel are equal, it is sometimes called a *trapezium*, from the Greek word *trapeza*, a table.

A *diagonal* is a straight line drawn between two opposite angular points of a parallelogram. A diagonal bisects a parallelogram—that is, divides it into two equal parts; thus let ACDB be a parallelogram, of which BC is a diagonal; the opposite sides and angles of the figure are equal to one another, and the diagonal BC bisects it.

From this it immediately follows, that the complements of the parallelograms, which are about the diagonal of any parallelogram, are equal to one another. It has been shown that the literal meaning of the term complement is to *fill up*; the application of this term to parallelograms will be understood by carefully comparing the following explanation with the annexed figure. Let ABCD be a parallelogram, of which the diagonal is AC; let EH, FG be the parallelograms about AC—that is, through which AC passes—and BK, KD the other parallelograms which make up the whole figure ABCD, which are therefore called the complements. The complement BK is equal to the complement KD. The two complements, joined to any of the parallelograms about a diagonal, form what is called a *gnomon*. Thus the parallelogram HG, together with the complements AF, FC, is the gnomon, which is more briefly expressed by the letters AGK, or EHC, which are placed at the opposite angles of the parallelograms which make the gnomon.

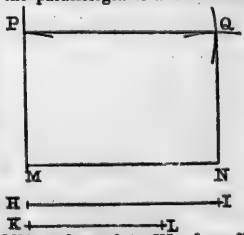




When it is required to describe a rectangle, of which the length and breadth are to be respectively equal to two given lines, the following operation is necessary:—

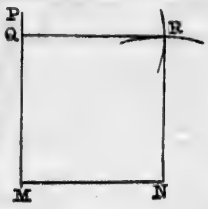
Let HI and KL be the given lines.

Draw a line MN equal to HI, and draw MP perpendicular to MN, and equal to KL; from P



as a centre, with a radius equal to MN, describe an arc at Q; and from N as a centre, with a radius equal to MP, describe an arc cutting the former in Q; draw PQ, NQ; and MQ is the required rectangle.

A square may, for practical purposes, be described in the following manner on any given line:—

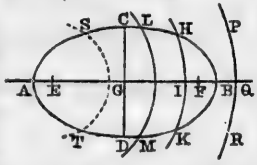


Let MN be the given line.

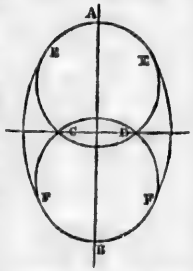
From M draw MP perpendicular to MN, and from MP cut off a part MQ equal to MN; then from Q and N as centres, with a radius equal to MN, describe arcs intersecting in R; draw QR and NR, and MNRQ is the required square.

The Ellipse.

An *ellipse*, or oval, is geometrically constructed as follows, by means of a pair of compasses:—Let AB be the major axis or transverse; draw a line bisecting it perpendicularly (which is done by describing from A and B as centres, with any radius, arcs cutting each other in C and D, and then joining C and D); and make GC, GD, each equal to half the minor axis or conjugate; then CD is the minor axis. From C as a centre, with half the major axis AG as a radius, cut AB in E and F, and these points are the foci. Produce AB to Q, till EQ becomes equal to AB; and from E as a centre, with EQ as a radius, describe the arc PQR, and it will be a species of directrix to the ellipse. From the same centre E, with any distance EI, describe the arc HIK, and with IQ, the distance of this arc from PQR, as a radius, and F as a centre, cut the arc HIK in H and K, and these are two points in the curve. Similarly, from E as a centre describe another arc LM; and with the distance of this arc from PQR as a radius, and F as a centre, cut the arc LM in L and M, and these are also two points in the curve. Find the other two points S and T in exactly the same manner. Having thus found a sufficient number of points in the curve, join them all carefully, and the ellipse will thus be constructed.



An ellipse may be constructed by the following method, which will be considered sufficiently exact for many practical purposes:—On a given line, as AB, describe two circles of such diameter as may best accord with the required proportions. Whatever size be taken, let the foot of the compasses be placed so as to describe the elongated parts of the figure true on the perpendicular line AB. Then draw a horizontal line so that it intersects the parts C and D, where the circles cut each other. Now the width of the oval may have been previously determined; if so, it must regulate the expansion of the compasses, and determine where the foot shall be placed on the line CD, equidistant from the centre, so as to describe the segment, that it may unite with the lines of the circles on either side, forming a continuous line, as at EE and FF; that is, in such a manner as to form the oval figure as if made by one operation.



* Quadrilateral figures are concisely named, as above, by the letters at two opposite angular points.

Polygons.—Inscribed and Circumscribed Figures.

A plane figure enclosed by more than four straight lines, is called a *polygon*, from the Greek words *polus*, many, and *gonia*, an angle; because, when a figure has many sides, it has necessarily a corresponding number of angles. A regular polygon has all its sides equal, and also all its angles; an irregular polygon has its sides or angles, or both, unequal. A polygon of five sides is called a *pentagon*; of six, a *hexagon*; of seven, a *heptagon*; of eight, an *octagon*; of nine, a *nonagon*; of ten, a *decagon*; of eleven, an *undecagon*; of twelve, a *dodecagon*; and of fifteen, a *quindecagon* or *pentedecagon*. Figures which have more than twelve sides are called polygons of 13, 14, 15, 16, 17 sides, &c.

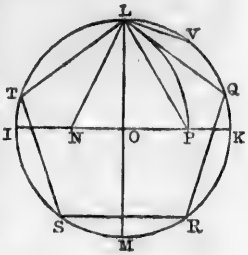
The centre of a regular polygon is a point equally distant from its sides or angular points. The *apothem* is a perpendicular drawn from the centre to any one of the sides, and analogous to the radius of a circle.

The whole boundary of any figure is called its *perimeter*, from *peri*, around, and *metreo*, I measure. The perimeter of a polygon is, in fact, what the circumference is in a circle, for by it the figure is enclosed. In practical geometry, the usual method adopted for obtaining regular polygons is, in the first place, to draw a circle about equal in size to the required size of the polygon; then the circumference is divided into as many equal parts as the polygon is to have sides; all that then remains to complete the figure is to draw straight lines or chords between each two points of division, and these lines will form the sides of the polygon.

Figures constructed according to this method are said to be *inscribed in* a circle, and all the angles of the inscribed figure will always be found to be upon the circumference of the circle. A regular pentagon may, by the following process, be inscribed in a circle:—

Let SLR be the given circle.

Draw two perpendicular diameters, IK, LM; bisect the radius OI in N; from N as a centre, with NL as a radius, cut OK in P; with radius LP, and centre L, cut the circumference in Q; join LQ, and other four chords equal to it being drawn in succession in the circle, the required polygon will be formed.



A regular decagon may be inscribed in a circle by a little extension of the same process:—

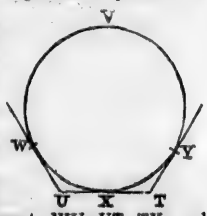
Let SLR be, as before, the given circle.

Find a side LQ of the inscribed regular pentagon; bisect the arc LQ in V, and the chord LV being drawn, it is a side of the regular decagon; and ten chords equal to it being successively placed in the circle, will form the polygon.

Sometimes a figure is described about a given circle, and is then said to be a circumscribed figure, the circumference of the circle being touched by each of its sides. In practical geometry, the method of describing a regular polygon about a circle is the following:—

Let WVY be the given circle.

Find the angular points of the corresponding inscribed polygon of the same number of sides; let W, X, Y, be three of these angular points; through these points draw the tangents WU, UT, TY; and UT is a side of the required polygon; in the same man-

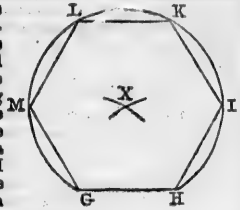


ner the other sides are found, and the circumscribing polygon is thus described.

In this manner the regular pentagon in the adjoining figure is described about the circle; H, K, L, M, and G, being the angular points of the inscribed regular pentagon, and tangents through these points being drawn, the circumscribing regular pentagon is formed.

Practical geometry affords a short and easy method of constructing a regular hexagon upon a given line.

Let GH be the given line.



From G and H as centres, with the radius GH, describe arcs intersecting in X, and this point is the centre of the circumscribing circle; hence with the radius GH, from the centre X, describe a circle, and apply GH six times along the circumference, then GHIKLM is the required hexagon.

Another fact relating to the properties of regular figures, and which is of some importance in several of the mechanical arts, is, that there are only three regular figures which can cover a surface completely, so as to leave no intervening interstices; these figures are the square, the equilateral triangle, and the hexagon: we have a familiar example of the fact that squares can completely cover a surface, in a common chess-board—the sides of each square coincide exactly with the sides of the adjoining squares, and no part of the board between the squares is left uncovered. The reason of this is, that all the angles made by any number of lines meeting in one point, are together equal to four right angles, or to 360 degrees; and that, therefore, if it be required to lay any number of figures together, so that the sides may be joined, and that no space may intervene between, it is a necessary condition that the angles contained between their sides be some aliquot part of 360, else their angular points cannot all meet in one point, neither can the surface be covered exactly. The angles of squares being right angles, or angles of 90°, it is obvious that four squares can completely cover any plane surface which is proportionable to their size, because $90 \times 4 = 360$. Six equilateral triangles can be joined without leaving any interstices, because the number of degrees contained in each of their angles is 60, and $60 \times 6 = 360$. Three hexagons can also be placed contiguous to each other, because 120, the number of degrees contained in each of their angles, multiplied by 3, produces 360: but no other figures could by any means be thus placed without leaving interstices; and it is useful to bear this in mind, because in mosaic work, inlaying, paving, and some kinds of ornamental painting, it is often requisite to cover a surface with some regular figure. We sometimes see octagons laid near each other in painted floors, &c. and there is always an empty space between them; but this empty space is a perfect square, because the number of degrees in each angle is 135, and as two angles only meet in one point, the sum of both, $135 + 135$, being equal to 270, there are evidently 90° required to make up the required number 360; and 90° are, as we have shown, contained in the angle of a square.

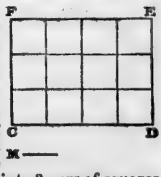
The honeycombs of a bee-hive afford a familiar illustration of the fact just explained, with respect to the figures which can cover a surface. Of the only three regular figures which can entirely fill up any given space, the bees have selected the hexagon; but here the question arises—Why were the little mathematicians led to choose the hexagon in preference to the square? The reason is cogent and philosophical: the object of the bees was not only to fit in their habitations closely together, so that labour and wax might be saved, and that each little cell might be strengthened by the immediate juxtaposition of other cells, but also to render the interior of each cell as large and commodious as possible; because the young ones are lodged in these cells, and besides, the honey which is to supply the whole hive with food during the winter is stored away in them. Had the square or the equilateral triangle been chosen, the angles of the cell would in that case have certainly been farther from the centre, but the sides would have come nearer to it; for just in proportion to the number of sides is the length of the apothem. When a figure has but few sides, the apothem is comparatively short; and, other things being equal, it increases in length according as the sides are more numerous. The longer the apothem, the farther the sides recede from the centre; therefore it is clear that a figure of many sides circumscribes a larger space than a figure of equal perimeter, which has fewer sides. This is one of the reasons why a circular form is given to domestic utensils, such as ewers, bottles, casks, culinary vessels, &c. and also to water-pipes, and to the pipes used for conveying gas. A circle is merely a polygon of an infinite number of sides; on account of the infinite smallness of its sides it is free from all angular projections, and having more sides than any other polygon, it can, with a given perimeter, according to the principle just laid down, enclose the largest possible space. It follows from this, that if, from a given quantity of materials, a vessel is constructed having a circular form, that vessel will be found capable of receiving a larger volume of contents than another vessel wrought into any other form out of the same given quantity of materials would be able to contain. This principle is one of very extensive application, and is constantly acted upon in architecture and in many of the arts.

The capacity of a circle, as, for instance, a circular tube, is greatly increased by only a small addition to its diameter, because the increase is all round. The increase of capacity is in the ratio of the squares of the diameter: a tube 8 inches in diameter has four times the capacity of one which is 4 inches in diameter; one 16 inches in diameter has four times the capacity of one 8 inches in diameter; and so on.

MENSURATION OF PLANE FIGURES.

It is often requisite, for many practical purposes, to ascertain the exact size of a given figure. For this purpose certain lines of a determinate length, as inches, feet, yards, miles, &c. have been pitched upon as the *units of measure* or *lineal units*; and measuring a line consists in finding how often one or other of these units of measure is contained therein. Measuring a figure consists in finding the number of squares contained within its boundaries, the sides of each of those squares being equal to one of the lineal units above-mentioned; the number of squares, when found, is called the *area* or *superficial content* of the figure.

A rectangle is very easily measured, it only being requisite to ascertain its length and breadth, and then to multiply the one by the other.



If CE is a rectangle, and M the unit of measure, as, for example, a foot; and if the base CD contains M 4 times, and the side DE contains it 3 times, the number of squares described on M that are contained in CE is just $= 4 \times 3 = 12$ square feet. For by laying off parts on CD, DE, equal to M, and drawing through the points of division lines parallel to the sides of the figure, it will evidently be divided into 3 rows of squares, each containing 4 squares; that is, $3 \times 4 = 12$ squares or square feet.

If the side CD contained $4\frac{1}{2}$ inches, and DE 3 inches, it would similarly be found that the number of square inches in the figure would be $= 4\frac{1}{2} \times 3 =$

$\frac{9}{2} \times 3 = 13\frac{1}{2}$ square inches; or $4{\cdot}5 \times 3 = 13{\cdot}5$ square inches; and whatever is the length of the sides, the area is found always in the same manner.

The area of a square is at once known by multiplying one of the sides by itself; thus supposing one side of a square table to measure 4 feet, then 4 multiplied by 4 gives the whole number of square feet contained in the table—namely, 16.

It is demonstrated by Euclid, that parallelograms upon the same base and between the same parallels are equal to each other; from this it follows that the area of a rhombus and a rhomboid can be ascertained by the same easy process adopted for measuring rectangles—namely, by multiplying the length by the perpendicular height or breadth. The area of a triangle is also found in the same way, the base being multiplied by the perpendicular height; but only half the product denotes the content of the triangle, because a triangle is exactly the half of a parallelogram of the same base and altitude.

The area of any quadrilateral may be found by the same method: a diagonal being drawn from two of its opposite angles, it will be divided into two triangles, and by computing as above the area of each triangle, and then adding their areas together, their sum will indicate the whole extent of area comprised within the quadrilateral. The area of a trapezoid is generally found by multiplying half the sum of the two parallel sides by the perpendicular distance between them; the area of a trapezium may likewise be found in the same way. When it is desired to ascertain the area of an irregular polygon, diagonals must be drawn between the opposite angles; this will divide the figure into quadrilaterals or trapezoids, and triangles, and the area of each of these must be found separately, according to the above rules; all these areas added together will give the whole superficial content of the polygon.

The area of a regular polygon is found by adding all the sides together, and then multiplying the sum by the apothem; half the product will be equal to the area. The reason of this is, that every regular polygon may be divided into as many equal triangles as it has sides, and as the area of a triangle is equal to half the product produced by the multiplication of the base by the perpendicular, so the total amount of all the triangles forming a polygon may be found by multiplying the sides of the polygon, which are the bases of the respective triangles, by half the apothem; because the apothem, as before explained, is only a perpendicular drawn from the centre of the polygon to the middle of one of the sides, and is therefore equal to the perpendicular height of each triangle; half the product, as in the case of a single triangle, therefore, gives the required area.

The rule for finding the area of a polygon leads to that for finding the area of a circle; because, as before observed, a circle may, by approximation, be considered as a regular polygon with an infinite number of infinitely small sides. As the area of a polygon is obtained by the multiplication of its perimeter by its apothem, so it may naturally be inferred that the multiplication of the circumference of a circle by its radius will be the means of discovering the area of the circle. But here a difficulty arises; it is evident that the radius and circumference cannot be multiplied until the exact length of each be known: there is no difficulty of this kind in the measurement of polygons, because their sides, being straight lines, can easily be measured; the radius of a circle, being also a straight line, can be measured with equal facility; but how are we to ascertain the length of the circumference? This question has occupied the attention of philosophers from age to age, and was never solved to the entire satisfaction of any till about a century ago. Innumerable attempts have been made to discover what ratio a circumference bears to its diameter. Archimedes, one of the Greek geometricians, who lived more than two thousand years ago, assigned the ratio to be as 7 to 22; nearer ratios have been discovered since his time. A Dutch mathematician carried the ratio to 36 figures, and this was at the time considered so important a discovery, that it was engraved on his tombstone at Leyden. Others subsequently extended the ratio still further; and in a French work published about 1719 A.D., it was carried to no less than 128 figures. The ratio 3·1416 is sufficiently accurate for all common purposes. When very great accuracy is required, the ratio 3·14159 may be used instead of 3·1416. Sometimes the ratio 3·1415926536 is taken, but such a high degree of accuracy is seldom required. The general rule for finding the length of the circumference of a circle is to multiply the diameter by the ratio, and the product is the circumference; or to add the constant logarithm 0·4971509 to that of the diameter, and the sum is the logarithm of the circumference.

CONSTRUCTION OF SCALES—PROPORTION.

In practical geometry, scales of various kinds are used for the construction of figures. Scales are lines with divisions of various kinds marked upon them, according as they are to be used for measuring lines or angles. The name of *scales* is given to lines so divided, because the Latin word for ladder is *scala*, and the divisions are equidistant like the steps of a ladder. A line so divided is for the same reason said to be *graduated*, this word being derived from the Latin *gradus*, a step.

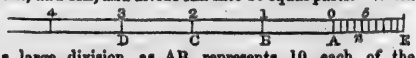
The *values* of the magnitudes of lines or angles are numbers representing the number of times that some unit of the same kind is contained in them.

The *unit of measure* for lines is some line of given length, as a foot, a yard, a mile, and so on.

The unit of measure for angles is, as we have already shown, the ninetieth part of a right angle.

The method of constructing a scale of equal parts is the following:—

Lay off a number of equal divisions, AB, BC, CD, &c., and AE, and divide AE into 10 equal parts. When



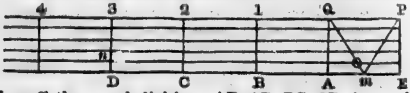
a large division, as AB, represents 10, each of the small divisions in AE will represent 1. When each of the large divisions represents 100, each of the small divisions in AE represents 10. Hence, on the latter supposition, the distance from C to *n* is 230; and on the former supposition, it is 23.

If the large divisions represent units, the small ones on AE represent tenths—that is, each of them is $\frac{1}{10}$, or ·1. On this supposition the distance C*n* is 2·3.

To construct a plane diagonal scale.

1. A diagonal scale for two figures.

Draw five lines parallel to DE, and equidistant, and

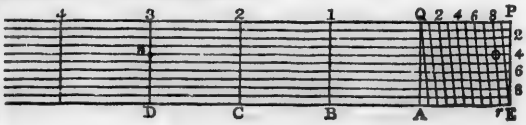


lay off the equal divisions AE, AB, BC, CD, &c., and make EP, AQ, B1, C2, &c. perpendicular to DE. Find *m* the middle of AE, and draw the lines Q*m*, *m*P.

The mode of using this scale is evident from the last. If the large divisions denote tens, then from *n* to *o* is evidently 34.

2. A diagonal scale for three figures.

Draw ten lines parallel to DE, and equidistant. Lay off the equal parts AB, BC, CD, &c., and AE, and draw EP, AQ, B1, C2, ... &c. perpendicular to DE. Divide QP, AE, into 10 equal parts. Join the 1*st*, 2*d*, 3*d*, ... divisions on QP with the 2*d*, 3*d*, 4*th*, ... divisions on AE respectively.



If the divisions on AD each represent 100, each of those on QP will represent 10. Thus from 3 on AD to 8 on QP is 380; but by moving the points of the compasses down to the fourth line, and extending them from n to o, the number will be 384. For the distance of 8 on QP from Q is 80, and of r from A is 90; and hence that of o from the line AQ is 84.

When the divisions on AD denote tens, those on QP denote units; and from n to o would then represent $38\frac{4}{10}$ or 38·4.

When the numbers representing the lengths of the sides of any figure would give lines of an inconvenient size taken from the scale, the numbers may be all multiplied or all divided by such a number as will adapt the lengths of the lines to the required dimensions of the figure.

Scales, by enabling us to ascertain the length of lines and magnitudes of figures, are very useful in the investigation of the doctrine of proportion. The import of the term proportion has already been sufficiently dwelt upon in arithmetic; and the reader has only to apply the ideas there developed to lines and to figures.

To prevent any misapprehension on the subject, it is well to understand clearly the distinction between the terms *equal* and *similar* figures. Equal figures are those which are precisely the same in every respect, being of the same size and of the same form. Similar figures are those which are precisely of the same form or shape, but of different sizes; the angles of two similar figures are equal, and the homologous sides—that is, the sides which lie in the same relative position in each figure—are proportional.

There is always a difficulty in the demonstration of the doctrine of proportion, on account of the frequent occurrence of incommensurable quantities—that is to say, quantities which have no common measure; the subject is, however, rendered clearer by higher branches of mathematics.

The applications of the doctrine of proportion are very numerous and important, for it is the very foundation of many arithmetical, algebraical, and trigonometrical operations. It furnishes rules for taking plans in architecture and surveying: a map, whether of an estate or of a country, is merely a proportional representation on a small scale of the exact outline of a district. Sculpture and painting, usually numbered among the fine arts, are really wholly dependent upon the mathematical doctrine of proportion; a statue or bust, for instance, is either equal to some given figure, and is then familiarly termed 'large as life,' or else it is a similar figure, proportionably larger or smaller than the given figure, according as it is constructed on a larger or a smaller scale. In the same way landscape paintings are merely delineations of the prominent forms in natural scenery, all of which are represented in proportion on a smaller scale; and the value of the painting in a great measure depends on the mathematical exactness of these proportions.

ANALYSIS OF EUCLID'S ELEMENTS.

It is one of the most remarkable facts in the history of science, that while the great majority of ancient scientific treatises have been altogether cast aside, and their place supplied by more recent productions, destined in their turn to be as entirely superseded by others of still more recent date, yet that one book has weathered every ebb and flow of popular opinion, and still holds as high, if not a higher, place in the public estimation, as when first given to the world. This work was written more than 2000 years ago; and it is surely scarcely necessary to add, that Euclid was the author, or perhaps rather the compiler, of this extraordinary production. There are thirteen books extant written by Euclid, and hence called 'Euclid's Elements.' The fourteenth and fifteenth books are supposed to have been added by Hysicles of Alexandria, about 170 A.D. The method of reasoning pursued throughout these 'Elements,' and adopted by all mathematicians, is the following:—In the first place, certain definitions, postulates, and axioms, are laid down, which form the entire basis of all mathematical science. Perhaps it might be advisable to make a few observations on the exact meaning of these terms before we proceed farther.

By a *definition* is merely meant an explanation or a description of the characteristic properties of the object defined; the assertion, for instance, that 'an isosceles triangle is that which has only two sides equal,' is a definition, because it conveys to an unlearned person an idea of the meaning of the term isosceles.

A *postulate* is something that is allowed to be done, or to be *imagined* to be done. The postulates given by Euclid are the following:—

1. A line may be drawn from any one point to any other point.
2. A line may be produced (that is, continued or lengthened) at pleasure to any length.
3. A circle may be described about any centre, and at any distance, or with any radius. It will be evident, from a careful examination of these postulates, that when necessary to prove any process of reasoning, it is permitted to draw a line to the moon, and another from the moon to a star, or to any point in the heavens; and although it is of course impossible really to draw such lines, yet by these postulates we are permitted to *imagine* them to be so drawn. It is also evident, that by these postulates we are permitted the use of two instruments in mathematical reasoning—namely, the ruler and the compasses.

Mascheroni, an Italian mathematician, endeavouring to render the narrow basis upon which geometry is upreared still more narrow, suggested a method of performing all mathematical problems by the aid of compasses alone, dispensing altogether with straight lines and the ruler: an account of this plan may be seen in a celebrated work published by Mascheroni about A.D. 1797, entitled *Geometria del Compassa* ('Geometry of the Compasses').

An *axiom* is a statement of some simple fact which is self-evident, or requires no proof; thus, the 9th axiom is an assertion that the whole is greater than its part. It is impossible to doubt a statement like this; even a child is prepared to admit its truth; for who is not aware that a whole mass of stone, for instance, is greater than any fragment that may be broken off it? and every day's observation is equally confirmatory of all the other axioms, which, as propounded by Euclid in the first book, are the following:—

1. Things which are equal to the same thing, are equal to one another.
2. If equals be added to equals, the wholes are equal.
3. If equals be taken from equals, the remainders are equal.
4. If equals be added to unequals, the wholes are unequal.
5. If equals be taken from unequals, the remainders are unequal.
6. Things which are double of the same, are equal to one another.
7. Things which are halves of the same, are equal to one another.
8. Magnitudes which coincide with one another—that is, which exactly fill the same space—are equal to one another.
9. The whole is greater than its part.
10. All right angles are equal to one another.
11. Two straight lines cannot be drawn through the same point, parallel to the same straight line, without coinciding with one another.
12. It is possible for another figure to exist, equal in every respect to any given figure.

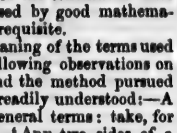
Geometrical facts and suppositions are, by Euclid and all other mathematicians, couched in a form of expression called a *proposition*. There are three kinds of propositions—*theorems*, *problems*, and *lemmas*. A *theorem* is a statement of some truth or class of truths; but as,

with the single exception of the axioms, no bare assertion or statement is admitted into geometry unless fully corroborated by proofs, a theorem requires to be demonstrated. There is no way of proving the truth of a theorem, except by reference to some truth or truths already established by previous theorems; which again must have been demonstrated by some preceding theorems; and thus we are led back from theorem to theorem, until we arrive at the foundation upon which they are all found to rest—namely, the definitions and axioms.

A *problem* either proposes something to be effected, as the construction of a figure, or it is a question which ought to be solved; in either case it requires something *to be done*, and therefore depends entirely upon the postulates for its solution. After the *solution* has been stated, its sufficiency for performing all the required conditions still remains to be proved.

A *lemma* is a theorem which properly belongs to some other part of geometry, but which, from the close connection which subsists between all the branches of mathematical science, is often fitly introduced to explain some difficulty which would otherwise arise in the demonstration of the succeeding theorems or problems. As lemmas rather disturb the continuous order of a subject, they are never used by good mathematicians except when absolutely requisite.

Having now explained the meaning of the terms used in geometrical reasoning, the following observations on the nature of that reasoning, and the method pursued by Euclid and others, will be readily understood:—A proposition is first stated in general terms: take, for instance, the 20th proposition—'Any two sides of a triangle are together greater than the third side.' This is but bare assertion: to advance a step farther, Euclid places the figure referred to—namely, a triangle—before the student, and tells him that, in the annexed triangle—namely, ABC—any two sides of it together are greater than the third side; that is to say, the sides BA, AC are together greater than the one side BC; the sides AB, BC are greater than AC; and BC, CA are greater than AB. This is certainly calling off the attention from a mere general observation, and confining it for a time to the examination of one individual case; it is also demanding the assent of the perceptive faculties; for the moment that the eye lights upon the triangle ABC, the mind is immediately ready to acknowledge that two of its sides are together greater than only one of its sides: yet the matter cannot rest here. Euclid knew, as well as any of our modern philosophers, that there are *two* primary principles in the human intellect: the eye sees and conveys its impressions directly to the perceptive or observing faculties; but information thus acquired ought to be immediately brought under cognisance of those faculties which enable us to trace the cause as well as the effect, and to compare the relation of things. Euclid therefore subjected every proposition he advanced to a double kind of proof, by addressing *both* the sets of faculties which compose the human intellect: perhaps this may alone be sufficient to account for the fact, that his work has from age to age been used as the text-book of elementary geometry, while other works, because less truly philosophical, have engrossed public attention for a moment, and have then sunk into oblivion.

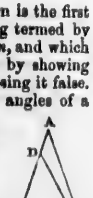


A brief analysis of the several books composing what is called 'Euclid's Elements,' may not be unacceptable to the unlearned reader. The first three propositions in Book I. are problems, and show the several methods of describing an equilateral triangle, of drawing a straight line equal to a given straight line from a given point, and of cutting off from the greater of two given straight lines a part equal to the less. The 4th proposition is the first theorem which occurs in Euclid, and requires to be examined a little in detail, because, in connection with the 8th proposition, it forms the foundation of all that is advanced respecting the comparison of triangles. This important theorem, as stated by Euclid, is as follows:—

If two triangles have two sides of the one equal to two sides of the other, each to each, and have likewise the angles contained by those sides equal to one another, their bases, or third sides, shall be equal, and the two triangles shall be equal, and their other angles shall be equal, each to each—namely, those to which the equal sides are opposite. Or if two sides and the contained angle of one triangle be respectively equal to those of another, the triangles are equal in every respect.

Let ABC, DEF be two triangles, which have the two sides AB, AC equal to the two sides DE, DF, each to each—namely, AB to DE, and AC to DF, and the angle BAC equal to the angle EDF; the base BC shall be equal to the base EF, and the triangle ABC to the triangle DEF; and the other angles, to which the equal sides are opposite, shall be equal, each to each; namely, the angle ABC to the angle DEF, and the angle ACB to DFE. The method adopted for demonstrating this theorem, as well as that contained in the 8th proposition, is a peculiar species of demonstration which has received the name of *superposition*: it is, in reality, the same method pursued by tailors and dressmakers when they wish to satisfy themselves as to whether a piece of cloth has been cut correctly from a given pattern; they place their original pattern and the piece of cloth or silk together, the one behind the other, and carefully observe whether the edges of one project beyond those of the other; but if they both coincide in every point, the tailor knows that his cloth has been correctly cut according to the pattern. In the same way Euclid requires the triangle ABC to be applied to, or placed exactly over, the triangle DEF, so that the point A may be on D, and the straight line AB upon DE, the point B shall coincide with the point E, because AB is equal to DE; and AB coinciding with DE, AC shall coincide with DF, because the angle BAC is equal to the angle EDF; wherefore, also, the point C shall coincide with the point F, because AC is equal to DF; but the point B coincides with the point E, wherefore the base BC shall coincide with the base EF, and shall be equal to it. Therefore, also, the whole triangle ABC shall coincide with the whole triangle DEF, and be equal to it; and the remaining angles of the one shall coincide with the remaining angles of the other, and be equal to them—namely, the angle ABC to the angle DEF, and the angle ACB to the angle DFE. The postulates do not permit one triangle to be cut out and placed over the other, therefore Euclid only *imagines* what would be the result supposing this were to be done. This theorem depends entirely upon the 8th axiom, being, in point of fact, merely what a logician would call the converse of it; for in the 8th axiom it is stated, that magnitudes which coincide with one another—that is, which exactly fill the same space—are equal to one another; and in this theorem, in order to prove them equal, it is proved that they coincide.

The demonstration of the 6th proposition is the first instance in Euclid of a species of reasoning termed by logicians *indirect*, or a *reductio ad absurdum*, and which consists in proving a theorem to be true by showing that an absurdity would follow from supposing it false. The theorem here advanced is, that if two angles of a triangle be equal to one another, the sides which subtend, or are opposite to, those angles, shall also be equal to one another, and it is demonstrated by the following indirect mode of reasoning:—Let ABC be a triangle, having the angle ABC equal to the angle ACB, the side AB is also equal to the side AC. For if AB be not equal to AC, one of them is greater than the other. Let AB be the greater, and from it cut off DB equal to AC, the less, and join DC, therefore, because in the triangles



DBC, ACB, DB is equal to AC, and BC common to both; the two sides DB, BC are equal to the two AC, CB, each to each; but the angle DBC is also equal to the angle ACB; therefore the base DC of the one is equal to the base AB of the other, and the triangle DBC is equal to the triangle ACB, the less to the greater, which is absurd. Therefore AB is not unequal to AC—that is, it is equal to it.

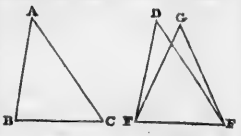
The corollary or inference drawn from this is, that all triangles having equal angles have also equal sides.

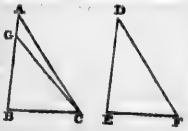
The 7th proposition affords another specimen of that kind of indirect demonstration, which logicians call a *dilemma*. It is stated in the proposition that, upon the same base, and on the same side of it, there cannot be two triangles that have their sides which are terminated in one extremity of the base equal to one another, and likewise those which are terminated in the other extremity equal to one another. This is proved by examining separately every possible position in which two equal triangles can be imagined to be placed so as to have but one base: it is evident that if they *could* be so placed, the vertex of one triangle must be either without, within, or on one side of the other triangle; each of these suppositions is examined separately, and each proved to be impossible; the reader is thus brought into a dilemma, having no alternative but to admit the truth stated in the theorem. There are many instances in which this species of demonstration is used by Euclid.

The 8th proposition refers to equal triangles.

The 9th, 10th, 11th, and 12th propositions are useful practical problems, showing how to bisect (that is, divide in two) an angle and a straight line; also how to draw a straight line at right angles to a given straight line, from a given point in that given line, as well as from a point without or beyond that given line.

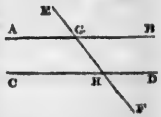
The 16th, 17th, 18th, and 19th propositions refer to the angles of triangles. The next proposition most worthy of examination is the 26th, which investigates the same subject as the 4th and the 8th—namely, the conditions of the equality of triangles. The 4th proposition has already been fully explained. In the 8th it is proved that if two triangles have two sides of the one equal to two sides of the other, each to each, and have likewise their bases equal, the angle which is contained by the two sides of the one shall be equal to the angle contained by the two sides of the other; or if the three sides of one triangle be respectively equal to those of another, the triangles are equal in every respect. Thus let ABC, DEF be two triangles having the two sides AB, AC equal to the two sides DE, DF, each to each—namely, AB to DE, and AC to DF; and also the base BC equal to the base EF; the angle BAC is equal to the angle EDF, and the angles at B and C of the triangle ABC are respectively equal to those at E and F of the triangle DEF. The 26th proposition gives still further information on this useful subject. It shows that if two triangles have two angles of the one equal to two angles of the other, each to each, and one side equal to one side—namely, either the sides adjacent to the equal angles, or the sides opposite to the equal angles in each, then shall the other sides be equal, each to each, and also the third angle of the one to the third angle of the other; or if two angles and a side in one triangle be respectively equal to two angles and a corresponding side in another triangle, the two triangles shall be equal in every respect. Thus let ABC, DEF be two triangles which have the angles ABC, BCA respectively equal to DEF, EFD—namely, ABC to DEF, and BCA to EFD; also one side equal to one side; and first, let those sides be equal





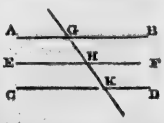
which are adjacent to the angles that are equal in the two triangles—namely, BC to EF; the other sides shall be equal each to each—namely, AB to DE, and AC to DF; and the third angle BAC to the third angle EDF. This little group of theorems is found very useful in the arts, for it is often requisite to have some rule by which to be able at once to determine whether two given triangles are exactly equal to each other; and if such rules were firmly engraven in the mind of every mechanic, there is no doubt but that there would be far less expenditure of time, labour, and money.

In the 27th proposition, the investigation of the properties of parallel lines is commenced, and this subject is continued through the 28th, 29th, 30th, and 31st propositions, until suddenly broken off by the introduction of one of the most remarkable propositions in the whole book—namely, the 32d, in which it is shown that the three interior angles of a triangle are together equal to two right angles. This important fact has already been examined, and therefore we have only to add that it was discovered by Pythagoras, a philosopher of Samos, about 500 B.C. The doctrine of parallel lines must not be dismissed hastily, for, with the exception perhaps of proportion, no other part of elementary geometry has created so much perplexity and discussion. The first two theorems relating to parallel lines are very simple and easily demonstrated; for the 27th theorem only affirms, that if a straight line falling upon two other straight lines makes the alternate angles equal to one another, these two straight lines shall be parallel. The 28th theorem is equally easy of demonstration, as it merely assumes that if a straight line falling upon two other straight lines makes the exterior angle equal to the interior and opposite angle upon the same side of the line, or makes the interior angles upon the same side together equal to two right angles, the two straight lines shall be parallel to one another. To make this more clear, it may be as well to subjoin an example. Let the straight line EF, which falls upon the two straight lines AB, CD, make the exterior angle EGB equal to the interior and opposite angle GHD upon the same side; or make the interior angles on the same side, BGH, GHD, together equal to two right angles; AB is parallel to CD. But the 29th proposition assumes the converse of this—namely, if a straight line fall upon two parallel straight lines, it makes the alternate angles equal to one another; and the exterior angle equal to the interior and opposite upon the same side; and likewise the two interior angles upon the same side together equal to two right angles. Now the assertion contained in this theorem is both easy of comprehension and evident to the senses; the difficulty lies in subjecting it to that rigorous demonstration to which all theorems must be brought before they can be received as mathematical truths. Euclid has endeavoured to prove it by means of a *reductio ad absurdum*, but this species of demonstration is for many reasons never adopted by good mathematicians, when it is possible to prove the truth of a statement by any other process of reasoning. Almost every succeeding mathematician has devised some particular method of his own to elucidate the doctrine of parallel lines, but no one has ever yet fully succeeded in effecting the required demonstration.



The 30th proposition shows that straight lines which are parallel to the same straight line are parallel to one another. The following demonstration of this fact is founded upon the truths previously advanced in the 29th and 27th propositions:—

Let the two lines AB, CD be parallel to EF; then AB and CD are parallel to one another. For because GHK cuts the parallel straight lines AB, EF, the angle AGH is equal to the angle GHF. Again, because the straight line GK cuts the parallel straight lines EF, CD,



the angle GHF is equal to the angle GKD; and it was shown that the angle AGK is equal to the angle GHF; therefore, also, AGK is equal to GKD, and they are alternate angles; therefore AB is parallel to CD.

The 33d proposition resumes the chain of demonstration, which was suddenly interrupted by the insertion of the famous 32d proposition, and continues the investigation of the properties of parallel lines. This subject naturally leads to the examination of parallelograms; and indeed it may be said that almost all the succeeding propositions in the first book are devoted to the investigation of parallelograms, and the relation subsisting between the properties of parallelograms and those of triangles. In proposition 35, for instance, it is alleged that parallelograms upon the same base and between the same parallels, are equal to each other; in proposition 37, the same fact is affirmed with respect to triangles—namely, that triangles upon the same base and between the same parallels are equal. Propositions 36 and 38 are the converse of the preceding. The most celebrated, however, of the succeeding theorems, and the most striking, perhaps, in the whole range of geometrical science, is the 47th proposition. We subjoin the theorem and the example given, and refer those who are curious as to the method of demonstration to Euclid himself. In any right-angled triangle, the square which is described upon the sides subtending the right angle, is equal to the squares described upon the sides which contain the right angle. Let ABC be a right-angled triangle, having the right angle BAC; the square, described upon the side BC, is equal to the squares described upon BA, AC; that is, the square BE is equal to the two squares BG and CH. Pythagoras had also the honour of discovering this important truth. It is related, that immediately upon the discovery, he was so transported with joy at the value of the truth, and with gratitude at being permitted to reveal it to the human race, that he sacrificed a whole hetacomb—that is to say, a hundred oxen, as a testimony of his thankfulness. This story is entirely fabulous; yet something may be gained even from a fable; and from this fictitious narration we learn, that the truth now unfolded in the 47th proposition was held in the highest estimation, not only by the discoverer, but by the ancients who invented the fable and who transmitted it to posterity.

Having now examined Euclid's method of reasoning, and the various forms of logical arguments employed by him, and adopted by others in demonstrations, it now only remains to glance rapidly at the contents of the other books.

In the second book, the properties of rectangles and squares, formed under given lines, *constitute* the principal subject of investigation. All the demonstrations in this book are very simple; many of them consist chiefly in proving that the figure drawn is really composed of the rectangles alluded to in the proposition; and most of the demonstrations are founded upon the self-evident principle, that the whole is equal to all its parts taken together. The three first propositions show the theory of common mathematical multiplication, and also that of the mensuration of rectangles in practical geometry, already explained. The 4th may be called a geometrical demonstration of the rule laid down for extracting the square root to two terms in arithmetic and algebra. The 5th, 6th, 7th, and 8th propositions show the principles upon which some useful operations in algebra are conducted; all the remaining propositions of this book are of great value in trigonometry.

The third book is devoted entirely to the investigation of the circle, and of various lines considered with reference to the circle, and drawn within or without its circumference. The properties of tangents and of tangent circles are fully considered; and also the relation between angles which are made at the circumference and those made at the centre. This book is of great use in various mechanical arts; it is also the foundation of practical geometry, the circle being very frequently used in the construction of complicated figures.

The fourth book may be considered as a continuation of the third, as it treats of such figures as cannot be easily drawn without the circle. It explains the methods of describing regular polygons in and about circles; and conversely, to describe circles in and about regular polygons.

The fifth and sixth books may be considered together, being both devoted to the same subject—namely, the doctrine of proportion. The fifth book is introductory to the sixth, for it lays down abstract theorems relative to proportion; and the sixth book shows the application of these theorems to geometry. Every branch of mathematical science is more or less dependent upon the demonstrations contained in these two books.

The seventh, eighth, ninth, and tenth books are never put into the hands of students, being of very little use in any part of mathematics. The doctrine of proportion is more or less dwelt upon in all of these four books; and they also treat of the greatest common measure of any two numbers, of square and cube numbers, and of incommensurable quantities. The main, if not the only, object of Euclid, in writing these four books, seems to have been to settle the intricate question of incommensurables.

The remaining books of Euclid are entirely devoted to the examination of solids, and to the investigation of their properties and relations.

SOLID GEOMETRY.

It has been already observed, that all bodies having length, breadth, and thickness, such as wood, timber, &c. are called solids; and that the investigation of the properties and relations of the various figures assumed by such bodies, is the object of solid geometry.

The boundaries of solids are surfaces. Those solids which are bounded by plane surfaces are called *polyhedrons*, from the Greek words *polus*, many, and *edra*, a seat. The planes which contain a polyhedron are called its *sides* or *faces*; the lines bounding its sides are termed its *edges*; and the inclination of any two of the planes is called a *dihedral* angle.

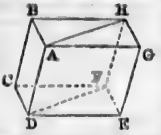
The meaning of parallel lines having been already explained, it is only necessary to say that the word parallel has the same signification when applied to planes as when applied to lines. *Parallel planes*, like parallel lines, would never meet, even if lengthened to any extent. The ceiling and the floor of a room are parallel planes.

A *solid* angle is formed by three or more plane angles meeting in the same point. The corner of a box, for instance, is a solid angle formed by the junction of three angles—namely, the plane angle terminating one side of the upper or under surface of the box, and the two plane angles belonging to its two sides.

The generic name of *prism* is given to all polyhedrons contained between two opposite, parallel, and equal polygons, connected together by parallelograms. The common bricks used in masonry are familiar examples of one species of prism; the little optical instrument used for showing the colours of rays of light, is another kind of prism—it is a glass, bounded by two equal and parallel triangular ends, and three equal and similar sides. The two ends of prisms are generally called the *terminating planes*, and one of them is called the *base*. The edges of the sides are called the *lateral edges*, and those of the terminating planes are called the *terminating edges*. Prisms may be right or oblique, regular or irregular. In *right* prisms, the lateral edges are perpendicular to the base; in *oblique* prisms the sides are in an oblique position with respect to the base. A right prism, having regular polygons for its

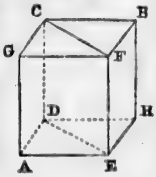
terminating planes, is said to be *regular;* an *irregular* prism is one in which the ends are irregular polygons. The line joining the centre of the terminating planes of a regular prism is called the *prismatic axis*, and the *altitude* or *height* of the prism is equal to the length of this line.

The parallelograms which form the sides of prisms are always equal in number to the sides of the base, and prisms are classed accordingly. The prisms which have a triangular base are called *triangular* prisms; those which have a quadrangular base are called *quadrilateral* prisms. *Hexagonal* prisms are those having a hexagon for their base; and *polygonal* prisms are those of which the base is a polygon. The parallelopiped and the cube are two quadrangular prisms, which, being of great importance in the arts, require special attention. The *parallelopiped* is bounded by six four-sided figures, of which every opposite two are parallel. It is called rectangular when its base is a rectangle; and when these six planes are all rectangles placed perpendicularly to each other, it is said to be right, and oblique when the planes are inclined to each other. We can scarcely look around us without seeing rectangular parallelopipedons. Beams of timber, hewn stones, the box of a gardener's wheelbarrow, the bodies of carts, are almost invariably rectangular parallelopipedons; and this form is generally given to houses and to rooms. It is one of the propositions of the 11th book of Euclid, that if a solid be contained by six planes, two and two of which are parallel, the opposite planes are similar and equal parallelograms; thus let the solid CDGH (which is a parallelopiped) be contained by the parallel planes AC, GF; BG, CE; FB, AE; its opposite planes are similar and equal parallelograms.



Parallelopipeds, when cut by a plane passing through the diagonals of two of the opposite planes, are formed into two equal triangular prisms.

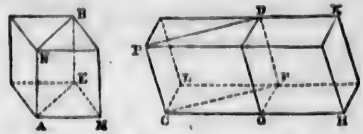
Let AB be a solid parallelopiped, and DE, CF the diagonals of the opposite parallelograms AH, GB—namely, those which are drawn betwixt the equal angles in each; and because CD, FE are each of them parallel to GA, though not in the same plane with it, CD, FE are parallel; wherefore the diagonals CF, DE are in the plane in which the parallels are, and are themselves parallels; and the plane CDEF shall cut the solid AB into two equal parts.



Because the triangle CGF is equal to the triangle CBF, and the triangle DAE to DHE; and that the parallelogram CA is equal and similar to the opposite one BE; and the parallelogram GE to CH; therefore the planes which contain the prisms CAE, CBE are equal and similar, each to each; and they are also equally inclined to one another, because the planes AC, EB are parallel, as also AF and BD, and they are cut by the plane CE; therefore the prism CAE is equal to the prism CBE, and the solid AB is cut into two equal prisms by the plane CDEF.

Def.—The *insisting* straight lines of a parallelopiped, mentioned in the following propositions, are the sides of the parallelograms betwixt the base and the plane parallel to it.

Parallelopipeds are equal when they are upon equal bases and of the same altitude. This fact is very evident, and is constantly acted upon when the solids are right; for instance, in making book-shelves, each shelf is made equal to the others—that is, it is made equally long and equally broad, and has the same altitude or thickness. Solid parallelopipeds which have the same altitude, are to one another as their bases: thus let AB, CD be solid parallelopipeds of the same altitude; they are to one another as their bases—that is, as the base AE to the base CF, so is the solid AB to the solid CD.

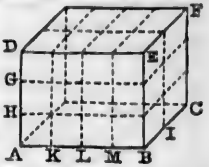


Whatever can be proved respecting the properties of parallelopipeds, is equally true with respect to those of cubes, because a cube is merely a parallelopiped with square sides. The dice used by gamblers are cubes; and tables, footstools, and rooms often receive a cubic form. Just as the unit of measure for plane surfaces is a square, so the *unit of measure for solids* is a cube, and the length of each side of the cube is an inch, a foot, a yard, or any other lineal unit which may be fixed. To measure the solidity of a solid is to ascertain how many cubic inches, or cubic feet, &c. are contained therein. The solidity of a parallelopiped is found by multiplying the length by the breadth, and the product by the height; the result gives the number of cubes contained within the figure.

Let l, t, and h, be the length, breadth, or thickness, and the height, and v the volume or solid content; then

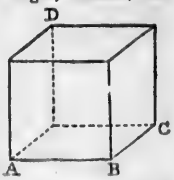
$$v = lth.$$

Let AF be a right rectangular parallelopiped. Let its length AB be 4 lineal units, as 4 inches, its thickness BC 2 inches, and its height AD 3 inches. The solid can evidently be divided into three equal portions by planes through G and H, parallel to the base AC; and into four equal portions by means of planes through K, L, M, parallel to the side BF; and into two equal portions by a plane through I, parallel to BD. Each of the small cubes into which the solid is now divided, is a cubic inch; the number of cubic inches in the lowest portion HC is 4 × 2, or 8, and in the second and uppermost portion there are as many; and in them all, therefore, there are 4 × 2 × 3, or 24—that is, to find the cubic contents of the solid, find the continued product of the length, breadth, and height.



The solidity of a cube is found by multiplying the side by itself, and that product again by itself; or, literally, by raising the side to the third power.

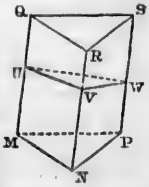
Let e = an edge of a cube; then $v = e^3$.



The reason of the rule is evident, since a cube is just a parallelopiped, whose length, breadth, and height are equal.

The solidity of all prisms, or of any parallelopiped, may be found by multiplying the area of the base by the height.

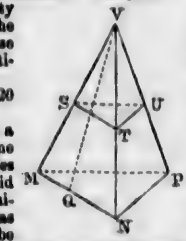
Let b denote the base, and h the height; then $v = bh$.



A pyramid is an angular solid, which has a polygon for its base, and triangles for its sides or faces; these sides all meet in one point, and form a solid angle, which is called the vertex of the pyramid. Pyramids, like prisms, may be either regular or irregular. When the base of a pyramid is regular, the line joining its vertex or summit is called its *axis*, and when the axis is perpendicular to the base, it is then a *regular* pyramid. They are also said to be triangular, quadrilateral, polygonal, &c. according as the base is a triangle, a quadrilateral, a polygon, &c. The Pyramids of Egypt are quadrilateral, having square bases and four similar and

equal triangular sides. An obelisk is also a pyramid, and has a square base and triangular sides; but the height is very great in proportion to the extent of the base. The solidity of a pyramid is found by multiplying the area of the base by the perpendicular height, and one-third of the product is the answer: $v = \frac{1}{3} bh$.

Example.—Find the solidity of a rectangular pyramid, the length and breadth of its base being 6 and 4 feet, and its altitude 20 feet.

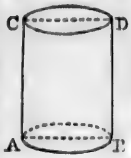


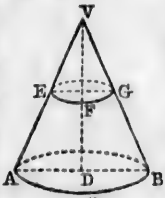
$v = \frac{1}{3} bh = \frac{1}{3} \times 6 \times 4 \times 20 = 160$ cubic feet.

By a regular solid is meant a solid bounded by regular plane figures, and its solid angles equal; that is to say, a solid in which all the sides are equiangular and equilateral. It has been proved that there can be only five regular solids; these are often called Platonic bodies, because Plato was the first who investigated their properties. The names of these five regular solids are the following; and it will be observed that these names are formed by prefixing the Greek numeral indicating the number of sides to the termination *hedron*, from *edra* (Greek), a seat; that is, a side:—

The *tetrahedron* is a regular triangular pyramid, whose sides are equilateral triangles. The *hexahedron* is a cube. The *octahedron* is contained by eight equilateral triangles. The *dodecahedron* is contained by twelve regular pentagons. The *icosahedron* is contained by twenty equilateral triangles. Each side of a regular solid, except the tetrahedron, has an opposite face parallel to it, and the edges of these faces are also respectively parallel.

A cylinder differs from a prism in having a circular instead of a rectilineal base; it is contained between two equal and parallel circles and a convex surface. The line joining the centres of the two circles is called the *axis*. When the axis is perpendicular to the plane of the bases, the cylinder is said to be *right*. Steam-boilers, the shafts of circular pillars, the stone of a common garden roller, the barrel of a gun, and many other familiar objects, are cylinders. Combinations of cylinders are also very frequently used in the arts; telescopes and opera-glasses, for instance, are merely cylinders fitted one within the other, and of which circular lenses form the base. The solidity of a cylinder is found in the same way as that of a prism—namely, by multiplying the area of the base by the perpendicular height. This rule is founded upon the theorem that a cylinder and a parallelopiped, having equal bases and altitudes, are equal to one another. A cone, like a cylinder, has a circular base, but it terminates in a point like a pyramid; sugar-loaves are made in the form of cones. The annexed figure is a cone. AB is the base, V is the vertex, and the straight line VD joining the vertex and the centre of the base is called the axis. A frustum of a solid is a portion contained between the base and a plane parallel to it; thus the portion EGAB is a frustum of the cone. When the axis of a cone is perpendicular to its base, it is called a *right* cone. Other cones are said to be *oblique*. A right cone may be described by the revolution of a right-angled triangle about one of the sides of the right angle. It is proved that if a cone and a cylinder have the same base and the same altitude, the cone is equal to the third part of the cylinder. From this fact results the method usually adopted for ascertaining the solidity of a cone. The area of the base is multiplied by the altitude, which, as before shown, is the rule for finding the solidity of a cylinder; one-third of the result, therefore, gives the solidity of the cone.





SPHERICAL GEOMETRY.

A *sphere* or *globe* is a solid having one continued curved surface, and which is conceived to be generated by the revolution of a semicircle about its diameter: balloons and cricket-balls are spheres.

Spherical geometry consists in the investigation of the properties of spheres.

Every point on the surface of a sphere is equally distant from a point in the middle of the sphere called its *centre*; any line drawn from the centre to the circumference is called a *radius*, and any line drawn through the centre, and terminated at both extremities by the circumference, is termed a *diameter*. When the diameter is perpendicular to the plane of a circle of the sphere, it is termed an *axis*, and the extremities of the axis are called the *poles*. Circles of the sphere, whose planes pass through the centre, dividing the sphere into two equal parts, are called *great* circles, and all others are *small* circles. By the distance of two points on the surface of a sphere, is meant an arc of a great circle intercepted between them.

A *spherical angle* is that formed on the surface of the sphere by arcs of two great circles meeting at the angular point, and is measured by the inclination of the planes of the circles.

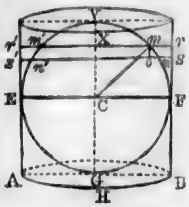
A *spherical triangle* is a figure formed on the surface of the sphere by arcs of three great circles, called its *sides*, each of which is less than a semicircle.

A *quadrantal triangle* is that of which one of the sides is a quadrant.

A *lunary surface* is a part of the surface of the sphere, contained by the halves of two great circles.

A *segment* of a sphere is a part cut off by a plane.

There are several methods of finding the contents or solidity of a sphere; perhaps the most simple and the most easy to be remembered is the following: Find, by the rules previously given, the solidity of the circumscribing cylinder, as EABF, which is a cylinder equal in diameter and height to the diameter of the sphere; two-thirds of it will be the volume of the sphere, because a sphere is proved to be equal to two-thirds of its circumscribing cylinder.



The exterior extent of surface, or convex superficies of a sphere, may be ascertained by multiplying the diameter of the sphere by its circumference. Thus in a globe of 20 inches diameter, and 62·832 circumference, the convex superficies is 1256·64 inches, because $62{\cdot}832 \times 20 = 1256{\cdot}64$. Also, the surface of any zone of the sphere, as *mnn'm'*, is exactly equal to the surface of the corresponding zone of the cylinder *rss'r'*.

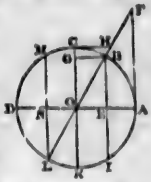
Spherical geometry is of great importance in several of the arts and physical sciences, and more especially in astronomy and navigation.

TRIGONOMETRY—LAND-SURVEYING.

Trigonometry signifies literally the art of measuring triangles, but with the progress of science the meaning of the word has been much extended. Trigonometry is divided into plane and spherical, according as it is directed to the investigation of plane or of spherical triangles.

A fixed relation subsists between certain lines drawn in and immediately round a circle; and it is upon this relation that trigonometry is founded. Most of these lines, such as tangents, secants, arcs, chords, &c. have already been mentioned; it only remains to add, that the sine of an arc is a straight line, drawn from one extremity of the arc perpendicular to the radius passing

through the other extremity, or it is in fact the half of the chord of double the arc. The sine, tangent, and secant of the complement of an arc, are called cosine, cotangent, and cosecant of that arc. This will be better understood by carefully examining the annexed figure, which is a representation of the various trigonometrical lines.



BC is the complement of the arc AB; BMD is the supplement of AB; angle BOC is the complement of AOB, and BOD is the supplement of AOB; BE is the sine of AB; AF is the tangent of AB; OF is the secant of AB; so BG is the sine of BC, or the cosine of AB; CH is the tangent of BC, or the cotangent of AB; and OH is the secant of BC, or the cosecant of AB.

The following rules for computation are useful in right-angled trigonometry; that is, in computing the sides and angles of right-angled triangles.

I. When two sides are given, to find an angle.

| Make a given side radius, then the side made radius is to the other given side as radius to the trigonometrical name of the latter side.|

II. When one of the three sides and an angle are given, to find a side.

| Make any side radius, then the trigonometrical name of the given side is to that of the required side as the given side to the required side.|

Although in this case any side may be made radius, it is preferable to make one of the sides concerned radius; that is, either the given or the required side, as this introduces the radius as a term of the proportion, and its logarithm being 10, it simplifies the calculation.

III. When the two sides are given, to find the hypotenuse.

| The sum of the squares of the two given sides is equal to the square of the hypotenuse.|

IV. When the hypotenuse and a side are given, to find the other side.

| The difference between the squares of the hypotenuse and the given side, is equal to the square of the required side. Or, the product of the sum and difference of the hypotenuse and a side, is equal to the square of the other side.|

When the square of a side is known, its square root gives the value of the side.

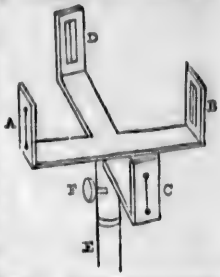
The first two rules are sufficient for the solution of all the problems in right-angled trigonometry; but the last two may sometimes be conveniently employed.

Trigonometry is one of the most useful departments in mathematical science. Its applications to practical purposes are very extensive, and it is of great importance in navigation, engineering, and, as we shall immediately see, in land-surveying.

Land-surveying is the method of measuring and computing the area of any small portion of the earth's surface, as a field, a farm, an estate, or district of moderate extent. There are three distinct operations in the art of land-surveying, all of which require the surveyor to possess a competent knowledge of arithmetic, algebra, and geometry. In the *first* place, the several lines and angles must be measured; *secondly*, they must be protracted or laid down on paper, so as to form a plan or map of the district; and, *thirdly*, the whole area of the district must be computed by means of the foregoing operations. In performing the first operation, the most useful instrument is a chain called *Gunter's chain*, from the name of the inventor, the Rev. Edmund Gunter, who lived about two hundred years ago. It is 22 yards or 66 feet long, and is composed of 100 equal links, the length of each being 7·92 inches. At every tenth link is a mark made of brass. An acre consists of 10 square chains, or 100,000 square links. There are 80 chains in a mile, and 640 acres in a square mile.

Iron pins, about two feet long, called *arrows*, with red handles, or pieces of red cloth, attached to them, are used for sticking in the ground at the end of each chain length when measuring in the field. Ten of them are commonly used.

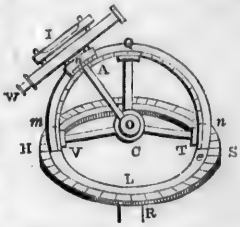
In measuring land with the chain, two persons are required, one at each end of the chain; the one who walks first is, for the sake of distinction, called the leader, and the other the follower. Lines measured perpendicularly to chain lines, to the angular points, and other points of the boundary of a field, such as to crooked hedges, brooks, &c. are called *offsets*. The cross-staff is used in measuring offsets: it consists of two bars of brass placed at right angles, with sights at their extremities, perpendicular to the plane of the bars. There are narrow slits at A and C, to which the eye is applied, and wider openings at B and D, with a fine wire fixed vertically in the middle of them. The cross is supported on a staff E, about 4½ feet high, which at the lower end is pointed and shod with brass, so that it can easily be stuck in the ground. The sights are placed on the top of the staff, and fixed to any position by a screw F.



A simple cross staff may be made by cutting two grooves with a saw along the diagonals of a square board, to be fixed on the top of the staff. It can easily be ascertained if the sights are at right angles, by directing one pair of them, as AB, to one object, and observing to what object the other pair, CD, are then directed; then by turning the sights till the second object is seen through the first pair of sights AB, if the first object is then visible through the second pair of sights, and is exactly in apparent coincidence with the wire, the sights are at right angles; if not, they must be adjusted.

An instrument not less important in surveying is the theodolite. This useful instrument, fixed on the top of a tripod, consists of two graduated circles perpendicular to each other; one of which is fixed in a horizontal, and the other in a vertical, plane, and is used for measuring horizontal and vertical angles.

In the figure of the theodolite here presented, HRS represents an oblique view of the horizontal circle, and *mQn* a direct view of the vertical one which extends to little more than a semicircle. The vertical circle is movable about an imaginary axis, coinciding with the radius OQ, which, produced, passes through the centre C of the horizontal circle. On the vertical circle is fixed a telescope W, furnished with a spirit-level I; the telescope is connected with a movable radius OA, in contact with the opposite side of the vertical circle; and this radius is fixed to a vernier *o*, movable, by means of a screw, along the limb of the circle. When the centre *o* of the vernier coincides with the middle division Q of the circle, the axis of the telescope is then horizontal, and the instrument thus serves also as a spirit-level. A vernier to the horizontal circle is attached to the vertical circle at *e*, and is movable with it.

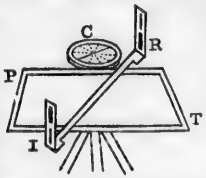


To measure a horizontal angle subtended at the instrument by the horizontal distance of two objects: Direct the telescope to one of the objects, and observe the number of degrees at *e* on the horizontal circle;

then while this circle remains fixed by means of a clamping screw, turn the vertical circle till the other object is visible through the telescope, and in apparent coincidence with the intersection of the cross wires, and note the number of degrees on the horizontal circle at *e*; then the difference between this and the former number is the required horizontal angle,

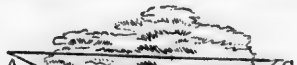
To measure a vertical angle: Direct the telescope to the object whose angle of elevation is required; then the arc, intercepted between Q and *o*, is the required angle. An *angle of depression* is similarly measured.

The plane table is frequently used in surveying. This instrument consists of a plane and smooth rectangular board fitted in a movable frame of wood which fixes the paper on the table PT, in the adjoining figure. The centre of the table below is fixed to a tripod, having at the top a ball-and-socket joint, so that the table may be fixed in any required position. The table is fixed in a horizontal position by means of two spirit-levels lying in different directions, or by placing a ball on the table, and observing the position of it in which the ball remains at rest. The edges of one side of the frame are divided into equal parts, for the purpose of drawing on the paper lines parallel or perpendicular to the edges of the frame; and the edges of the other side are divided into degrees corresponding to a central point on the board for the purpose of measuring angles.



A magnetic compass-box C, is fixed to one side of the table, for determining the bearings of stations and other objects, and for the purpose of fixing the table in the same *relative* position in different stations. There is also an index-rule of brass IR, fitted with a telescope or sights, one edge of which, called the *fiducial* edge, is in the same plane with the sights, and by which lines are drawn on the paper to represent the direction of any object observed through the sights. This rule is graduated to serve as a scale of equal parts.

A principle of measuring by triangles, which is alike common to land-surveying and the trigonometrical surveys of engineers, may be comprehended from the following figure. We wish to find the distance between two objects that are either invisible from each other, or inaccessible in a straight line from each other.



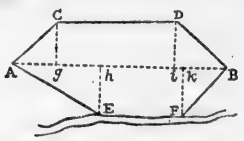
Let A and C be the two objects inaccessible in a straight line from each other, on account of a marsh. Measure two lines AB, BC to the objects and the contained angle B. In the triangle ABC, two sides AB, BC, and the contained angle B, are known; hence AC may be found.

Such a problem as the above is common in measuring heights and distances; and it will be understood, that the principle of throwing the area of any given field or set of fields into triangular spaces, is that pursued in all processes of land-measurement. In most instances fields are irregular in form; their outlines being often bent, with a greater width at one place than another. In such cases, after measuring the areas of the triangles, the odd pieces at the sides require to be measured, and their aggregate area added to the whole. We may illustrate the process of surveying as follows:—

The angular points of the large triangles or polygons, into which a field is to be divided for the purpose of taking its dimensions, are called *stations*, and are denoted by the mark o; thus o_1 is the first station; o_2 the second; and so on. The lines joining the stations, and which are measured by the chain, are called *chain lines* or *station lines*.

‖ Divide the field into triangles, or into triangles and quadrilaterals, the principal triangles or quadrilaterals occupying the great body of the field, and the rest of it containing secondary triangles and trapezoids formed by offsets from the chain lines. Measure the base and height, or else the three sides of each of the principal triangles, then calculate their areas by the rules in Mensuration of Surfaces, and also the offset spaces, and the sum of all the areas will be that of the entire field.‖

Example 1.—Find the contents of the adjoining field from these measurements, A being the first, and B the second station.—



On chain line.	Offsets.
$Ag = 150$	$gC = 141$ to left.
$Ah = 323$	$hE = 180$ to right.
$Ai = 597$	$iD = 167$ to left.
$Ak = 624$	$kF = 172$ to right.
$AB = 769$	

The double of the areas of the component triangles and trapezoids are found, in order that there may be only one division by 2—namely, that of their sum.

$gi = Ai - Ag = 447$, $iB = AB - Ai = 172$, and $hk = Ak - Ah = 301$, $Bk = AB - Ak = 145$.

Twice the area of the	
triangle $AgC = Ag \cdot gC = 150 \times 141$	$= 21150$
trapezoid $CgiD = gi\ (Cg + Di) = 447 \times (141 + 167)$	$= 137676$
triangle $DiB = Bi \cdot iD = 172 \times 167$	$= 28724$
triangle $AhE = Ah \cdot hE = 323 \times 180$	$= 58140$
trapezoid $hEFk = hk\ (hE + kF) = 301\ (180 + 172)$	$= 105952$
triangle $BkF = Bk \cdot kF = 145 \times 172$	$= 24940$
Twice area	$= 376582$

And area = 188291 = 1 acre 3 roods 21·26 poles.

These admeasurements, instead of being written out as above, are generally registered in a tabular form. A field-book, which is used to enter these measurements, is divided into three columns. The different distances on the chain line are written down in the middle column, and in the right and left-hand columns the offsets are inserted, with any remarks that may be made. The measurements on the chain lines are written in order upwards in the middle column, the first being written at the foot of the column, as the surveyor can thus more conveniently compare the measurements with the imaginary lines in the field.

In surveying a whole country by trigonometrical measurement, or in engineering plans for canals, railways, and roads, it is necessary to make allowance for the earth's convexity in all the calculations of levels. The degree of convexity, or departure from a true level, is reckoned to be about 7 inches and 9-10ths in the space of a geographical mile. (See HYDROSTATICS, No. 15.) In land-measuring, the scale of operations is ordinarily too limited to require any such allowance for difference of levels.

We have now, as far as our limits would admit, presented an outline of the methods pursued in land-surveying; and to those who design following out the study of this, as well as other branches of theoretic and practical mathematics, we recommend a regular course of instruction from Mr Bell's excellent treatises in CHAMBERS'S EDUCATIONAL COURSE—works so cheap, as to be within every one's reach.

DRAWING—PAINTING—SCULPTURE.

Drawing is an imitative art, by which the forms, positions, and relations of objects are represented on a flat surface. The faculties employed in this, as in other imitative arts, are possessed in a certain degree by all persons. Some possess these faculties in so high a degree, as to become fitted to exercise them as a profession, for the gratification of mankind at large. In others, they are manifested so moderately, that a protracted effort to make such persons become tolerable draughtsmen would only be labour thrown away. The majority of mankind, however, are so far endowed, as to be able, when instructed, to delineate any simple object, and to enjoy much pleasure from higher delineations produced by others.

The practice of elementary drawing at school, hitherto greatly overlooked, is calculated to produce the most beneficial results. As regards those who possess the faculties for design in a high degree of excellence, early practice will awaken those faculties, and furnishing them with stimulants to progress, secure the benefit of their ultimate exercise for the community. Lesser degrees of excellence will also be developed—such as would in vain perhaps essay excellence in the higher walks of art, but might become of incalculable value in connection with certain branches of manufacture.

As a means of elevating tastes and desires, and thereby embellishing what might be otherwise a routine of commonplace existence, drawing appears in its most interesting light. The person who has acquired a knowledge of botany, feels a new pleasure in examining the parts of a hitherto unseen plant; he who has acquired a knowledge of geology is interested in passing along a road, the side of which displays a deep section of strata, or from which he may view various granitic elevations; he who has acquainted himself with the principles of machinery, experiences an enjoyment in contemplating the intricacies of some great engine which another knows nothing of; and in the same manner he who has studied the art of drawing, discovers a source of new and innocent gratification in the innumerable forms and tints of external nature. Things formerly passed with a careless eye and a vacant mind, then assume a character which arrests attention and awakens thought. Those faculties of the mind which perceive and appreciate the figure, colour, and arrangements of objects, and trace in all a natural and appropriate beauty, spring up from a dormancy which might have otherwise known no interruption; a new association of our mysterious being with the physical world around us is practically established; and the value of existence becomes by just so much enhanced. Not surely that it is desirable that an absorbing interest should be created in all minds respecting the outward aspect of nature to the neglect of the more serious affairs of life. All that can be contended for is, that as many as possible should be rendered capable of looking with pleasure, instead of indifference, upon the beauties of nature, so that they may realise the benefit of this part of the intellectual and sentimental powers which have been conferred upon them; a portion of their nature which, like others, may be abused, but in its moderate use is not only a source of innocent pleasure, but may become the means of anticipating and supplanting many pursuits of a less worthy character. Nor, while the art is perhaps chiefly acquired with these views, may it be without some results of a more directly useful kind. In many situations—when wandering in our own, or roaming in foreign countries—we may see objects of which we would be glad to carry away some memorandum, and of which the slightest pencil sketch would be sufficient to awaken a recollection at any other time. And yet, for want of a few elementary lessons in drawing, many of even those who travel for the purpose of informing the public, are unable to commemorate such objects, or, at the best, can give only a few rude scratches in outline, which a professional artist has afterwards to fashion into shape—a shape, of course, in which correct representation is not to be looked for. In this point of view, drawing takes its place, as a useful art, by the side of writing, being, like it, a means of description, and one which may occasionally be even more serviceable than that art, though certainly not capable of so general an application.

Referring to the volumes on Drawing in our Educational Course for a methodic series of instructions, our design on the present occasion is to present a popular view of what may be done by comparatively unlearned persons to acquire a knowledge of the art, including perspective, which is the foundation of all pictorial delineation. It will be understood, then, that our observations are addressed directly to the pupil.

DRAWING.

Drawing is effected by various materials, as chalk, black-lead, or coloured pencils, Indian ink, &c. Drawings of a simple kind are made principally on white paper or Bristol board, but also sometimes on tinted papers, in which case the lighter parts are brought out by white crayons. Commence a study of the art by acquiring ease of hand, and in fact learn what the hand can do by its different evolutions. For this purpose, drawing lines with chalk on a black board is perhaps the best exercise. Either, therefore, on a board with chalk, or on paper with a pencil, learn to make drawings of lines, straight, curved, or a modification of either. Observe how much more beautiful is the appearance and effect of a curve in comparison with a straight line; and how nature delights in this waving of forms, of which we have examples in the bending of boughs in trees, the serpentine winding of rivers, and the curvilinear outlines of animals.

You may begin the drawing of objects by copying other drawings; but this species of exercise can only make you familiar with the manner in which lines answer the purpose of representation. To be master of the art, you must throw aside all drawings or copies, and learn to draw by your own ingenuity from tangible objects in nature and art. In this study the hand is taught to obey the conceptions of the mind. When, for example, we see a chair standing on the floor, we observe its shape or figure, its line of back, seat, legs, and all other parts about it. We then take a pencil, and bending the mind intensely on the form of the chair, try to define all the lines of the object on the paper or board. The more perfectly that the hand can obey the direction of the mind, while bent in thought on the object, so will the drawing more resemble the original in all its details.

The pupil, therefore, must be taught to call up the whole power of his mind respecting the appearance of an object, when he wishes to represent it by a drawing. On this, indeed, may be said to rest the fundamental principle of delineation in all its branches. No one can possibly attain even a mediocrity in the art, who does not, less or more, possess this power of recalling images to the mind, and of training his hand to act in strict conjunction with its dictates. The hand is only the instrument employed by the imitative faculty, and can do nothing useful without the strong concurrence of the will. Accomplishment in penmanship, and every other art in which design or figure is an element, is founded on this fundamental basis.

A plan of instruction in drawing has been lately introduced from the Normal School of Versailles into

England, and promises to be exceedingly suitable either for large classes or for private study. The pupils draw from solid forms, models of objects, not from drawings; 'therefore every line they make is a result of intelligence and a test of knowledge. Before they begin to delineate, they are made to understand what they are about to do, and the scientific rule they are taught to exemplify. This is, in our opinion, the only sound and true theory of elementary training in the *science* of drawing; for with the art this introductory course has nothing more to do than exercising the hand; its object is limited to teaching the pupils to see correctly the apparent forms of objects, and the seeming direction of lines, and to know the optical laws by which the real forms and actual direction of lines appear differently to the eye, according to the angle of vision under which they are seen. The pupils are not at first required to draw evenly or neatly, but only to express intelligibly, by rude lines, their comprehension of the rule exemplified by the model.'—*Art Union.* It may be added, that all such lessons will fall short of their desired end, unless the pupil acquire a proper idea of relative proportion in parts. He must learn to give each member its due size and no more, and to put all together to form a harmonious whole. Beginners usually commit ludicrous blunders in this respect, making a man's head as large as his whole body, or the windows of a house three times larger than they should be. Experience, and an attention to the following rules, will remedy these misconceptions:—

In pursuing the elementary lessons on solid objects, an idea of perspective will be unconsciously gained. It will be noticed that strong outlines mark the objects or parts of objects nearest the eye or in the foreground; while to make parts retire, or have an appearance of being at a greater distance, the lines must be made light, and the representations smaller. It is a matter of first consequence to bring out effects on a broad scale, not by repeated small markings, but by a comparatively few bold lines of greater and lesser thickness. You will observe that an object may be represented in two ways—first, by mere outlines describing its figure; and, second, by introducing strong shades among the outlines. Take, for illustration, fig. 1. Here the blades

Fig. 1.

of a plant are represented by a few thin and thick lines properly disposed, and by a little shading being thrown in to bring out the effect.

Fig. 2.

A just idea of the value of lights and shades may be said to be the beginning of all excellence in pictorial delineation; and you are recommended to lose no opportunity of acquiring it. The most simple objects afford examples. In fig. 2 we have a group of this nature, being a stone, a piece of broken wood, and the leaves of a tall grassy plant, such as may be observed in a field or by the roadside.

Mr D. R. Hay, in his excellent work, 'The Laws of Harmonious Colouring,' has the following practical observations on the method to be followed by young men in gaining a knowledge of drawing, with reference to patterns, decorations, and ornamental designs:—'The course of study I am about to point out is within the reach of all—even those in the most humble situations of life. They will find it of easy acquirement, and a source of continual enjoyment, in the improved medium through which it will lead them to view the most ordinary productions of nature. She shall be their instructor; for all that I can pretend to do, is to point out to them a practical mode of receiving her lessons. To the uninitiated I therefore address myself; and let them not be dissuaded from beginning by having no predilection for the study—the more they persevere, the more they will love it.

In the first place, your attempts ought to be of the most simple nature, and on as large a scale as you can conveniently adopt: therefore begin by procuring a black painted board or slate, of from two to three feet square, and with white chalk practise the drawing of squares, circles, and ovals, without any guide to your hand. You may make yourself copies of these figures by the ordinary rules. When you are tolerably perfect at these, upon the proper combination of which depends all linear harmony, you may practise in the same way triangles, hexagons, octagons, and such other figures as arise from the various combinations of the straight line. Next, by your circular and oval lines, you may form crescents, circular and flattened volutes, regular undulations, and other figures, which arise out of their various combinations, first making an accurate copy to yourself of each figure by measurement, and continuing to practise until you can form it by the eye with perfect ease. Avoid forming your figures by little bits at a time; do each line as much as possible by one sweep of the hand. When you find yourself pretty perfect in this kind of practice, I would recommend you at once to draw from nature. You may take for your first subject a cabbage leaf, the larger the better; and persevere in copying it, full size, until you can represent it accurately in outline, with its principal fibres. You may then vary your practice by other simple subjects of a similar kind, until you find you can do them all with ease.

Before endeavouring to draw more than one leaf at a time, you must know a little of perspective. The most simple mode by which you will attain such knowledge of this art as will be most useful for your present purpose, is to hang a circular object, such as a hoop, between you and the window; set it a-moving gently round, recede a little from it, and you will find that, as one side of it retires and the other comes forward, the circle which it describes becomes narrower and narrower, until it disappears altogether, and leaves nothing but a dark line, as if a stick instead of a hoop were hanging before you. I recommend you to do this between you and the window, because the hoop will appear like a dark line, and you will thereby be better able to mark the change that takes place in the shape of the circle. Fix it in various positions, and draw from it, and observe that it is a different figure from an oval. You may now hang up your cabbage leaf, or that of any other large and well-developed vegetable, and you will observe the same change in its figure as it turns round. Make an outline of its shape while its front is half turned from you, then bring it from between you and the light, and place it where the light will fall upon it, with its face half turned from you, as when it hung before the window. Take your outline, and within it draw the principal fibres as you see them. To do this properly will require a great deal of practice, but it will pave the way to your being able to draw the most complete groups of

flowers and foliage that can be placed before you. You may now hang before you a small branch of any tree or plant, with two or more leaves upon it—the larger the leaves are the better—and endeavour to make outlines of them, varying their shape according to their perspective, as already described; be particular on this point, for a great deal depends upon it.

You may now lay aside your chalk and slate, and provide yourself with a few sheets of common cartridge-paper, and some pieces of common charcoal—that made from lime-tree is the best. Stretch a whole sheet of your cartridge-paper upon your board by a wafer or a little paste at each corner. Place before you a cabbage, cauliflower, stalk of dock-blades, or any such large vegetable, and they will be more picturesque if the outer leaves are hanging loose. Copy these carefully in outline, using your charcoal gently, that any inaccuracy may be easily dusted off. A large thistle with its foliage is likewise an excellent example, but more difficult. Indeed you cannot go wrong in your choice—hemlock, fern, nettle, are all worthy of your study. From these the richest and most effective of Gothic ornaments were taken by our forefathers. The more you study such subjects, the more beauty and grace you will find in their forms.'

When a considerable advance has been made in the elementary department of drawing, it will be proper to go on to the higher stage of perspective drawing, in exact accordance with the rules on the subject. For this you will require the following

Requisites for Drawing.—Among the various articles required in systematic drawing, the first place may be given to a wooden board of a convenient size, or about two feet in length by eighteen inches in breadth; it should be perfectly smooth, and perfectly squared. On this board the paper on which the drawing is to be executed should be properly fastened. This is done by damping the surface of the paper with a wet sponge, and after it has fully expanded, fastening it down with a little thin glue round the edges; it should be laid on the board evenly, and left to dry in the air.

The next requisite is a flat rule called a T-square; this is a thin straight-edge, or rule, attached at right angles to a short piece of wood much thicker, so that when the cross-piece is moved along any side of the board, the rule will project across the paper, and by its edge pencil lines may be drawn straight from left to right and from top to bottom. To test the accuracy of the square, let other lines be made from the opposite sides of the board; and if they agree with the former lines, by being parallel to them, all is right. On these guiding lines, or rather indications, the correctness of the drawings will materially depend.

To these must be added a pair of compasses—an instrument so well known, that it is only necessary to remark, that the points should be just as sharp as to hold on the paper without piercing it. The compasses should be held lightly by two fingers and the thumb, and moved with the least pressure which the operation may require.

These simple implements will be sufficient, until a knowledge of the art suggests the necessity for a case of mathematical instruments.

Paper may be purchased of all qualities; for early practice, it is sufficient for it to be what is called *hard;* that is, able to endure being written upon with common pen and ink.

Black-lead pencils are of various qualities: a soft pencil gives off the lead too freely, and will not retain its point; a hard pencil wounds the surface of the paper, and cannot be easily obliterated; therefore the medium pencil is best for drawing perspective. The wood should be carefully cut from its point, and the lead sharpened by being gently rubbed on a file, which produces a better point than can be formed with a knife.

Indian-rubber, or a clean crumb of bread, to take out lines incorrectly drawn, is also necessary.

Every student of drawing is supposed to be acquainted with the form of acute, obtuse, and right angles, circles, ellipses, and other simple mathematical figures, and therefore we need occupy no time here in describing them: those who wish to refresh their memory on these matters are referred to the article GEOMETRY.

PERSPECTIVE DRAWING.

The study of perspective is commenced by acquiring a knowledge of certain principles, and the technical appellations by which they are described. The first thing which you will attend to is the existence in all correct perspective drawings of a *horizontal line.* The horizontal line is always the height of the spectator's eye, and of course fields or hills may be above this imaginary line in a picture. In the following diagrams the horizontal line is always marked H. There is a certain point on the horizontal line to which the eye is directed; this is called the *point of sight,* and in the following diagrams is marked P.

As noticed in the article OPTICS (No. 16), the apparent magnitude of any object is influenced by its distance from the eye: if near, the object seems large; if remote, it is small. It is, then, a most important principle in perspective drawing, to regulate the size of the objects marked according to the distance at which we wish them to appear. We have a good example of this gradual diminution of objects as they recede from the eye, in the manner in which a long avenue of trees seems to close in a point at its further extremity. It would be possible for a person, unskilled in the rules of perspective, and merely by the general directions already given, to give a representation on paper of the manner in which objects thus seem to diminish, as, for example, a row of posts; but as mathematical science gives exact rules on the subject, no one need trust to chance, but appeal to principles of unerring accuracy. We crave attention to these principles, which we endeavour to illustrate by certain lines in the diagrams which follow:—

Figure 3 represents a quadrangular drawing, of which AB is the base. Across the picture, at rather

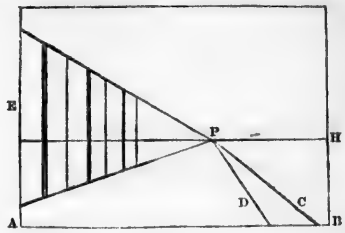


Fig. 3.

more than a third of the height, is a line H, representing the horizontal line. On the horizontal line, a point at P is the point of sight, and to this point all objects are diminished in proportion as they approach it. Thus a road represented by the two lines C D tapers to a point at P, and a row of posts E diminish towards the same centre of observation.

The horizontal line which, it will be perceived, regulates some important points in pictorial delineation, may be placed high or low at pleasure; but it is generally regulated in its elevation by the nature of the subject to be drawn. If placed high up, it leaves too small a proportion of sky, and produces what is called a bird's-eye view; if placed near the base, unless the scene be mountainous, the proportion of sky will be too great. In general, the horizontal line should be drawn at about one-third of the height of the picture. The point of sight may also be fixed at pleasure; but its best situation is removed from the centre towards one of the sides; if directly in the centre, the perspective would have too formal an effect.

When an object having angles, as a box, stands on a base parallel to the horizon, and two of its sides or sur-

faces can be seen, that which is farthest from the eye will recede according to the situation of the point of sight. Place a box, as in fig. 4, immediately in front of the eye; AB is its bottom or base, and EF is the farther edge of its top. AB, the base, being parallel to the horizontal line H, the point of sight will be at P, and the visual rays from the upper corners of the box will centre in P, because the eye is in front, and above the object. Any alteration of the position of the box, or the eye, will consequently require a corresponding arrangement of the laws of perspective.

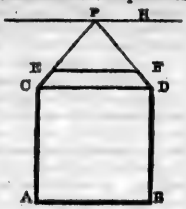


Fig. 4.

Place the box toward the farther side of the table, immediately in front, and lower the eye till the horizontal line is one-third down the box, when the top will be lost sight of; there let the eye be fixed, by resting the chin on any convenient object, and the front, or only one side of the box, will be seen. Then let the box be moved to the left, in a straight line, the position of the eye being retained, and a second side of the box will come into sight; its receding lines or visual rays will then be centered in the altered point of sight, and the side in front will retain its form, because its base is parallel with the horizon. When this experiment has been made, and the situations of the box and the eye have been considered—presuming the box to have been a cube—proceed to ascertain the mode of representing this object according to the rules of perspective, referring to the natural appearance of the box occasionally, the more effectually to fix the mutual resemblances in the mind. Fig. 5 will show the process by which all the particulars may be demonstrated. Presuming the paper is fastened down on the drawing-board, the T-square and pencil ready, commence thus: Apply the T-square and draw the base line A B, and also the boundary of the picture C D. Then draw the horizontal line H across the paper; this may be fixed at pleasure, but parallel to A B. Then find the half of the base A B, and draw a perpendicular beneath the picture to O, and on it place the profiled angle of 60 degrees, just at that distance which, by continuing the sides of the angle, they will intersect the extremities of the base, and together form an equilateral triangle, as A O B: this must be strictly attended to. Now, as before observed, the point of sight is better when removed from the centre of the picture; and taking a station to the right, by a horizontal line from O to S, this becomes the station whence the picture is seen, and the point of sight is therefore found by the perpendicular line from S to P on the horizontal line. Now, as a vanishing point is required to determine the width of the receding side of the box, the profiled angle of 90 degrees is to be placed at S on the perpendicular P S, and the side line continued until it intersects the horizontal line at V, which fixes the vanishing point: this also must be strictly attended to. It will be observed that the angle at S is one of 45 degrees, being the half of the profiled angle of 90.

We now call attention to the situation of the eye, which is always on a level with the horizontal line; therefore the true position of S is immediately in front of P, or, as if the perspective lines beneath the picture could be raised up to the level of S, and fixed at that distance from the picture, to show the true situation of the eye when viewing the object. The front square shape of the box may then be drawn in, occupying less than half the base of the picture, in order to show the perspective, as at fig. 3; then from the nearest perpendicular of the box draw the visual rays from the top and the bottom of the square to P, which give the diminutions. Now a line drawn from the corner of the box near A to the vanishing point V, will intersect the diminishing line, which gave the receding base of the box at L; and a perpendicular line from L to K on this intersection, will give the true representation of the square box as seen in perspective. If this were a cube of glass, the farther sides would be seen, as shown by the finer lines in the diagram.

Repeat this study in different sizes, referring to the natural appearance of the box, in order to feel, as well as see, the coincidence between that and the object produced by the rules of linear perspective. It is of importance that this diagram should be thoroughly understood, because many of the rules employed in it are frequently required.

The boundary of a picture, or the plane, may be of any proportions. The base is marked, in fig. 3, A B. The perpendicular, from the middle of this base line, assists in finding the situation for the angle of 60 degrees O, the width of the base, measured from the extremities to the perpendicular O, forming an equilateral triangle, as A O B. This is a rule, whatever may be the size of the picture; it also shows the proper distance at which a picture should be viewed. This expanse of vision, at an angle of 60 degrees, is marked in the diagram O, and places the point of sight in the middle of the picture, which is very often objectionable; therefore a line parallel with the base is drawn from O, and on this line the better station is taken, which is marked in the diagram S. Now the horizontal line H having been taken at pleasure, a perpendicular drawn into it from S will give the point of sight at P, into which the visual rays are drawn that regulate the receding side of the object. The vanishing point V is entirely distinct from the point of sight, of which there can be but one; but vanishing points may be numerous. This, marked in the diagram V, is of great consequence, for by it is determined the proper width of the object, by the line which intersects the visual ray from the base of the box A to V, as at L; and here the perpendicular to K, which intersects the upper visual ray, completes the perspective form of the object.

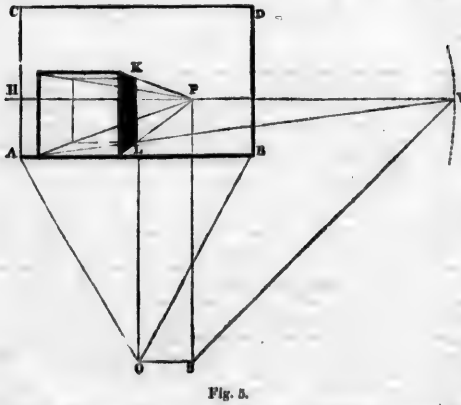


Fig. 5.

No objects better exemplify rules in perspective than articles of household furniture, such as boxes, chairs, tables, and chests of drawers. We direct your attention to the following illustrations:—Fig. 6 exhibits a parlour chair and a footstool. Observe that the chair stands with the corner of its seat nearest to the spectator, the point of sight being in the middle of the picture. The receding sides of the chair have their respective parts regulated by diagonals to their vanishing points. The footstool stands on a line parallel to the base, and therefore its visual rays tend to the point of sight in the centre of the picture. These may prepare the mind of the student to consider that objects,

when differently situated, have each their vanishing points regulated by the angle at which they are viewed.

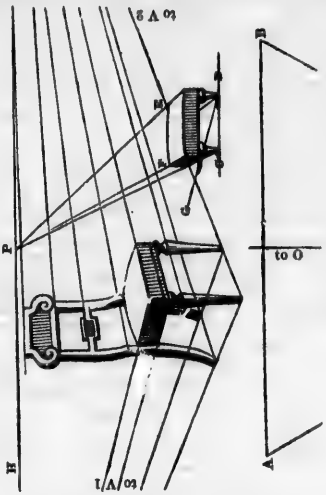


Fig. 6.

We recommend you, on all occasions, to draw the horizontal line so far on either side, that it will be intersected by the diagonals, which are to be drawn at an angle of 90 degrees from the station, into the horizontal line, where they determine the vanishing points. These are only indicated in the diagrams by the direction of those lines, and the words 'to V 1' or 'to V 2.'

In fig. 6, the base line A B is drawn, its centre determined, and the perpendicular drawn to O; the angle of 60 degrees is taken in agreement with the base line, making an equilateral triangle, and the point of sight P is fixed on the horizontal line H. The vanishing points are found by the angle of 90 degrees at O, projected on either side to V 1 on the left, and V 2 on the right, as before described. All the diminutions of corresponding ornaments on the back and front legs of the chair are drawn to V 2, while the side of the chair is regulated by V 1. The footstool is placed parallel to the base on the line C D, and its diminution regulated by the rays E P and F P. The diagonal G from the leg of the footstool D, to the vanishing point V 1, would determine the square of the stool, or the position of the farther leg, at the point where it intersected the ray C P.

Fig. 7 shows the perspective lines required to represent a writing-desk placed diagonally on a table which stands on the base line. The base of the picture is drawn as A B, the centre is taken, and a perpendicular drawn to O, for the angle of 60 degrees. The horizontal line is drawn at H. The parallel is drawn from O to S, and there the perpendicular to the horizontal line fixes the point of sight at P. Then the angle of 90 degrees is taken at S, and the sides being projected to the horizontal line, gives the vanishing points V 1 on the left and V 2 on the right. Now the table being seen in front, or on the base line, the visual rays from the legs and the top are drawn to the point of sight P. The table being supposed to be a parallelogram, its side, seen in perspective, will be about half its width seen in front; therefore let half the space seen in front be set off from the leg on the right; and the diagonal from that half to V 1 will give the diminution of the side of the table, where it intersects the ray from the front leg to the point of sight P, at R. A parallel line from this to the ray from the other front leg will give the situation T for the most distant leg. The writing-desk being presented with its corner towards the spectator, both sides will require their receding points, which are determined by the vanishing points V 1 and V 2. Such familiar objects should be drawn, by which the more readily to fix in the mind of the student the leading principles of linear perspective.

It will be seen that, when an object has its base line parallel to the horizon, the point of sight is in the picture, and that it is arranged in agreement with the angle under which the object is viewed. Thus if it be an object which has four sides, and one of those sides be immediatel in front of the eye, the visual rays will be hidden, because the point of sight is in or behind the object. It will also be seen that if the object be moved on either side, or the point of sight be altered by a change of station, the visual rays determine the receding side of the object immediately on a second side being seen.

If the base line of an object be removed from its parallel to the base line of a picture, the angle under which the object is viewed becomes altered in strict conformity with its changed position, the particulars of which the student may ascertain by placing an object in the various positions.

Suppose a chest of drawers, or a cube, to be placed and seen as in fig. 3, and while the nearest corner is to act as a pivot, the end near A to be moved so as to

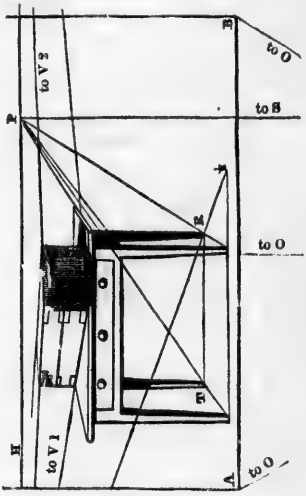


Fig. 7.

cause a space between the base line of the object at that end and the fixed base line of the picture, the angle of vision would require that the base and top lines of the object should have their vanishing points. The object could be moved thus at different times, until that which in the diagram is the receding side would become the front, and each position would require a diagram; but the student is presumed to have become acquainted with the fact, that at each pause in the movement of this object on its pivot, there will be exhibited a diminution on one side proportionate to the increase of the other side; until, by continuing these rotatory movements of the object, that side which was at first presented obliquely, becomes the front, and its base parallel to the base of the picture. The original front of the object, by the revolving movements, will have been lost or hidden, exactly in proportion as the receding side advanced to the front. Thus the vanishing point extended as the advancing side became more evident, just in proportion as the receding side diminished. Make these experiments, and observe, on the first change of position deviating from a parallel with the base of the picture, that the vanishing point V 1 was

required, and so far removed on the horizontal line on the left, as perhaps to require an angle of 80 degrees at the station, while V 2 on the right would then require an angle of 10 degrees. Any subsequent change of position in the object will alter the angles for the respective vanishing points, and these together always making an angle of 90 degrees.

Fig. 8 shows the method by which the situations of windows may be properly drawn in the representation of a house, seen obliquely. Draw the base line AB: find the angle of 60 degrees on the perpendicular from the centre, and mark the station S: determine the horizontal line H, and the point of sight on it, perpendicular to S: find the angle of 90 degrees, and draw the lines to the vanishing points V 1 and V 2: draw the nearest perpendicular of the house C, and fix where the nearest windows are placed, also their height and width, DE: draw these diagonals to the vanishing point V 2; they regulate the diminution of the heights of all the windows: draw also the cornice and the base lines; then draw a fine line F parallel to the horizon, and touching

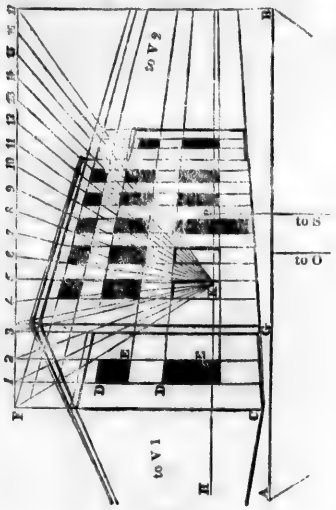


Fig. 8.

the perpendicular C; then, with the compasses, take the measure of the space between the perpendicular C, which is the corner of the house, and the edge of the window D, and mark it on the line F as at 1; then take the width of the window E, and mark it as at 2. It is better to have a second pair of compasses to prevent mistake in the alternate alteration that is required, or the space for the windows may be marked with the point of a needle on a piece of writing-paper, and then marked off carefully on the line F; then the compasses will mark the space between the windows only. The small projection which separates the centre from the wings must be noticed, as at G; then the space with compasses 4, then the window 5, then the space 6, then the window 7, then the space 8, then the window 9, then the space 10, then the window 11, then the space 12, then the window 13, then the space 14. This being the farther extremity of the centre of the house, the corresponding projection to G must be noticed, as being so much of the next space hidden behind the projecting centre; it will therefore be marked 15, then the window 16, then the space 17. These compose the spaces and widths of windows as seen in the front of the house; and it must be mentioned, that the points which have been made on the line F, must be perfectly true on the line, or the truth of the diminution will be impaired. Now assume a point about the middle of the house, on the horizontal line, as at K, and draw diagonals from all the points made on the line F into the point K, observing that the point of the pencil runs into both at every line. A needle may be placed at K, against which the straight-edge may be pressed, to assist in drawing the diagram correctly. Now the diagonals which regulated the diminution in the height of these windows, as drawn to V 2, will be intersected by the radii drawn from the point K into the marks on the line F, and those intersections will show the diminution of width according to the laws of linear perspective.

As this diagram may be crowded with lines, you are recommended to examine the intersections carefully, and mark the forms of the windows with a hard pencil, and then draw in all the perpendiculars as regulated by the radii on the diagonal lines. If in this state of the diagram there should appear any confusion, it will be far better to commence another, and the larger the drawing is, the less risk is there of disappointment. The side of the building—that is, the wing and the portion of the centre seen above, with the little projection at G, are drawn by diagonals to the vanishing point V 1.

You are advised not to pass this diagram without having obtained a perfect knowledge of the principles by which the diminutions are regulated. Difficult as this may appear, it ought by all means to be attempted, for it cannot be too strongly impressed on the mind, that no perfection in drawing, no delicacy in finishing, nor boldness of effect, can atone for deficiency in perspective. When a little progress has been made in this, so that the judgment is prepared to understand the arrangements which objects must undergo to be correctly represented on a flat surface, a scene in nature can be sketched without any material difficulty.

Fig. 9 represents a method by which archways are put into perspective:—

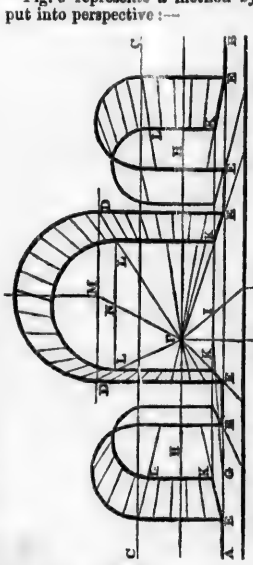


Fig. 9.

The base A B, the horizontal line H, and the point of sight P, are determined as in the preceding diagrams. In this it will be seen that if the point P had been retained in the centre of the subject, the sides of each respective arch would have been alike; to obviate this, P is placed a little to the left of the centre.

This is a subject which may often be met with, and you are advised to study such objects in nature, be they of one or more arches; ever remembering that the station must be preserved with the head towards the point of sight; the eyes only are to be turned from one part to another. You will thus practically learn the distance at which to take a station for such studies. If it be taken too near, too little of the subject will be seen. If it be taken too far off, then there will be more expansion than is required, and the subject will not show the minutiæ.

Suppose such an object as fig. 9 to be in front of the draughtsman: the piers between the arches should be sketched as perpendicularly as possible, and the arches turned by hand; then the depth of the receding sides, as nearly as the judgment may direct, and as much of the masonry as may point out the perspective of the

subject: then, while all is fresh in the memory, attach the sketch to the drawing-board, and by the T-square draw the base A B, the horizontal line H, the point of sight P, and the vanishing point V 2: then, by the T-square, correct all the perpendiculars and horizontals; draw the line C C, which is the chord of the smaller arcs, and D D, which is the chord of the large arc, and observe that the perpendiculars intersect the line C, and those at the centre arc at D: then find the centre for the arc M, and describe it correctly from one perpendicular into the other: do the same from their centres to the smaller arcs; and thus the superficies of the subject will be defined: then draw the visual rays from the base of all the perpendiculars E, and from the intersections on C C and D D, to the point of sight P, which give the receding lines for the visible sides of the archways. If the piers be square, a line drawn from the base of the perpendicular of the centre archway E, to the vanishing point V 2, will give the perspective width of the receding parts. If the piers be one square in front, and two squares deep, mark off a square to the left of the perpendicular, as at G; and a diagonal drawn thence to V 2 will give the receding depth where it intersects the visual ray E P at K. At this intersection draw the horizontal line I; and where this intersects the visual rays at E P, as at K, raise the perpendiculars till they intersect the visual rays C P and D P, as at L L. Thus will the receding sides of the archway be determined. To find the arc at the farther end of the subject, draw the horizontals L L; and the visual ray M P, where these intersect at N, is the centre on which the arc may be described. The smaller arches are to be found by a similar process.

Now the correcting of such a sketch by the application of the rules of perspective, will show where the eye and hand have failed in giving a faithful representation of the object. Therefore, again visit the spot, taking a station strictly in agreement with that in the drawing, and compare the corrected lines with those which nature will present. Let all be rigidly examined, and the result will not fail to be satisfactory.

We recommend that every opportunity should be taken to sketch such subjects from nature; they furnish excellent studies for linear perspective, and one such study would convey more information than the copying of a dozen drawings or diagrams.

SKETCHING FROM NATURE.

Having acquired a certain facility of hand, and mastered the principles of perspective, you may proceed to the more agreeable study of sketching from natural scenery. At first, do not attempt any difficult or complex subject. Select some assemblage of ordinary objects, such as may be thought agreeable in themselves, and likely to be represented with ease and satisfaction. The scene selected should not contain more than three or four objects of different kinds—such as a cottage, one or two trees, and a small rustic paling, with perhaps the addition of a little glimpse of background. You will observe that an artist rarely ever takes an object in its broadest and most regular form: he never represents a house, for instance, as if he had taken up his position right in front of it, as an architect would do; nor would he paint a row of trees at a right angle to his own position, seeing that the effect of such representations would be tame and formal. He endeavours to catch the careless grace of nature, as she appears to casual observation. A house, particularly, should always be viewed from a point a little aside from the front, so as to bring in as many of its angularities as possible. A group of natural objects should be represented as if the draughtsman had just by chance got his eye upon it; and yet the selection of a point from which this effect may be obtained must be a matter of study. For an early lesson in sketching from nature, it is enough that the objects be merely drawn in outline: to fill in details, and give the full effect of light and shade, must be left to a future period in the career of a young artist.

As an example of the scenes which may be selected for early sketches from nature, fig. 10 is given, being simply a cottage, backed by a few trees, and having some broken ground in front, while a glimpse of the sea is obtained at the side of the picture. The station of the draughtsman is here at S, in order that the cottage may not appear to have been viewed formally, and that the trees behind may give to the scene its neat pyramidal form, while the broken grounds in front communicate boldness of character, and the straight line of the sea at P (which is the horizontal line) affords a pleasing contrast to the other lines of the drawing.

Fig. 10.

It will be remarked that the cottage stands on a line parallel to the base A B; the point of sight P is perpendicular to the station S; consequently the rays that regulate the side of the chimney, the upper and under lines of the roof, and the window on that side of the cottage, all centre in P.

Provided with a sketch-book (measuring perhaps 10 inches long by 7 inches broad), the first thing to be done is to select a station from which the drawing is to be executed. A difficulty may present itself respecting the size of the proposed drawing; but the dimensions may be determined in a very simple manner. Hold up the sketch-book in front, with one eye closed, and the space in the scene covered by the book is that which may be drawn; of course, the farther off the book is held, the less of the subject will be covered. When the extent of the scene is arranged, the book may be gently lowered, and a few dots made on the top margin, merely to point out the relative situations of particular features, as the width of the cottage, and the trees. Then remembering to preserve the station, mark the point of sight on the distant horizon. Do not be in haste, but judge of the relative distances of the most prominent parts—such, for instance, as the gable end of the cottage and its length—and tenderly mark them on the places to be so occupied. When these or more dots for guides have been placed, examine their relative distances, and compare them with the objects, by holding the sketch-book out in front; so as to see the agreement between them over the margin. To arrange these particulars well at first, will save much trouble in obliterating falsely-drawn lines. Be careful, in sketching, to preserve the perpendiculars of walls and chimney; that is, to draw them vertically or at right angles with the base line, which is now the lower edge of the sketch-book.

To prevent the hand from injuring the sketch as it proceeds, commence on the left and proceed to the right. Endeavour to sketch the lines with a lightness of hand, or with what is called freedom, the effect of which is very distinct from lines drawn by a straight-edge: let them be rather broken, or a little wavy, yet having the general appearance of straightness. Let the masses of foliage be sketched with the same ease and confidence that the capital letter E, or the flourish of the D, are made in writing. Sketch the grounds, in their different undulations, rather more angularly, or as if ruggedly dashed in, and strengthen the lines where separation of parts seems to be required.

In examining the objects of which a scene like the foregoing is composed, you will observe that the lines for the cottage have one character, the lines for the trees another, and the lines for the ground a third character, which detach the objects from each other. A simple outline of these three forms is sufficient to be aimed at, for the introduction of more markings or separations would only tend to confuse early studies.

If the lines, on a first attempt, be not all which could be expected, they furnish a proof that the mind is in advance of the hand, and should operate as a stimulus to exertion. In a few studies you may discover that, by beginning with a cut point to the pencil, it gradually wears away, and gives an increasing thickness of line; this is often very advantageous, for as the sketching advances to the foreground, the bolder lines of the pencil contribute to the separation of parts, to regulate distances, and give a more spirited effect to the subject. You will also discover, after a little practice, that by a gentle twist of the pencil, a fresh point or surface will come in contact with the paper, and with it a finer line may be drawn. Occasionally, by pressing harder on the pencil, an increase of power will be communicated to such parts as may require separation or additional spirit, as on the rude line which forms the foreground in fig. 10, and gradually on the pathway to the cottage door.

Suppose a scene to consist of two or more plans, as the remains of a castle on an irregular surface, with a mass of trees in front, and near it, as the principal or leading feature of the scene, an arm of the sea, and remote hills forming the background or distance, and a rude foreground. We shall suppose that a scene of this nature, as represented in fig. 11, can be conveniently visited. Commence by selecting a station that will present a variety of forms or opposition of character, such as lofty objects contrasted by small objects, which will prevent the appearance of equal heights or parallels, and also prevent the scene from being crowded or closed up. The castle toward one side of the pic-

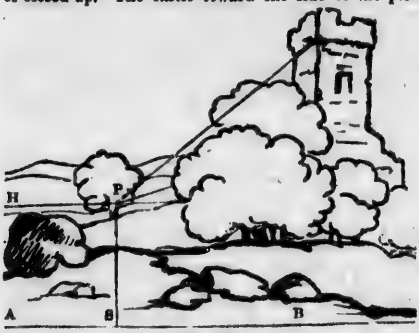


Fig. 11.

ture, and the distance on the other, so as to form an irregular diagonal mass, are in better relief than if the building with the trees were more in the middle of the subject. The opposition of angular to circular forms produces a pleasing effect in a sketch, and should be observed. If the perpendiculars of a ruin be broken, the general appearance must be that of standing upright; for however mutilated towers or walls may be, there will still be evidences of their having been properly constructed. When these particulars shall have been considered, proceed to arrange the situation of the principal mass, by dotting on the edge of the sketch-book, and by faintly indicating the forms, determine the horizontal line, observing that hills may appear far above: in fig. 11, it is at H on the extremity of the water, the station is at S, and consequently the point of sight at P, into which are drawn the visual rays, or lines which regulate the receding sides of the towers. These and the perpendiculars being arranged, they may be boldly sketched in, and the trees freely marked, in a character partaking of the semicircular; the fewer markings the better, for it is the useless separation of parts composing a mass that destroys the breadth and boldness of a sketch. The distant hills may be tenderly indicated with a fine point, and the foreground may be coarsely defined with a broad-pointed pencil, in order to detach it from the parts more distant. Here and there an additional spot or touch of the bold pencil may be given, to assist in preserving the gradations of distance.

The same object in nature will often present many excellent subjects for the sketch-book; even moving to a distance of fifty yards may present a scene of increased interest. Do not, therefore, fail to take advantage of such stations, and sketch an outline from each, in order to exercise the judgment by comparing the subjects afterwards. It is also useful to ascertain how nearly the eye has determined the truth, by applying the rules of linear perspective to every sketch at the earliest convenience. Many advantages arise from two or three students sketching the same scenes in company, for various valuable remarks are thereby elicited, tending to the mutual benefit of the party. The sketch-book should be preserved complete, as containing records of advance in judgment and correctness of delineation.

In drawing from nature, as in penmanship, every person may be said to possess a *manner* of his own. Some draw stiffly, and others with remarkable freedom. You are recommended to catch the tone of those who form their sketches in a bold and free style, but by no means imitate any one. Your object ought to be to draw scenes with *natural truth and beauty*, regardless of all *mannerisms*. At first you can scarcely avoid drawing with a certain degree of formal stiffness, but animated by a desire to excel, and exercising taste and judgment, your practice will improve, and your sketches will not fail to meet with approbation. Whatever be the difficulties you encounter, others whose works you admire were at the outset equally embarrassed; for rest assured that in most cases in which great proficiency has been attained in the art of delineation, no small degree of trouble has been endured, and many failures have taken place, before the artist was finally successful.

Drawing Foliage.—To draw correctly the various kinds of trees, with their respective characters of foliage, requires the most careful study and frequent exercise from nature. In an elaborate work on Landscape Drawing, published by Leigh, London, the following remarks occur on the characters of foliage:—'When a tree is near the eye, the leaves are distinctly separated from each other; their particular form, the insertion of their stems into the branch, the perfection of their local colour, are all apparent. Remove this object to the second plan, the foliage assumes masses, retaining the character, but the tone is altered; the separation of parts is no longer evident, yet it is recognised as the object previously inspected. Remove it still farther from the eye, the masses assume a uniform tone, relieved by indications of light and shade, softened by the intervention of atmosphere. Remove this object still more distant, it is rendered indistinct, and forms a portion of the mass of light or shade in which it may be situated. Nature presents these appearances to every inquiring eye, and the mode of representing them must depend on the perseverance of those who delight in transcribing them into their sketch-books.' This is so just, that the student might imagine the tree first inspected retiring gradually into indistinctness, and displaying, as it receded, the due portions of aërial effect. It also teaches how tenderly the outline must be expressed in extreme distance, how much more evident the marking may appear in the mid-distance, how much more defined the form becomes by light, shade, and markings, on the second plan, and how distinct the expression of character and power of touch ought to be as they approach the eye or the foreground.

Fig. 12. The willow has been represented by perpendicular markings, terminating in a point, to give the

Fig. 12.

idea of its pendant foliage. A broad mass of light is usually preserved, and an increase of markings is given to one side of each subdivision of foliage, with considerable power of characteristic markings on the shade-side of the tree, besides an occasional repetition of touch for effect.

The fir has been represented by short angular markings connected with each other, much like the zig-zag scratch with a pen to obliterate an incorrect word. These markings are continued in agreement with the projections of the branches, and are repeated with increased power on the shade-side of the tree. A few slight markings are given on the extremities and beneath the masses to indicate the existence of foliage on the farther side of the tree.

The elm has been represented by escalops in a semicircular direction, so distributed as to give the idea of thick foliage; the masses are separated by detached markings, indicating the same character, and their rotundity given by repetitions, with occasional increase of power. A few dots on the extremities will relieve the harshness of the outline, where the escalops are too evident or regular.

The oak has been represented, as in fig. 13, by a character which partakes of angular and broken circular markings, intermingled with dots and sharp touches. The lighter parts are pencilled tenderly, and the shade portions are repeated upon, with additional power given by sharp angular markings.

We mention these varieties for the purpose of showing that foliage is not to be represented by distinctly portraying every leaf, but by a bold grouping and superficial outlining; the purpose being served by merely a general representation. Suppose a tree is to be selected for placing in the foreground of a drawing, where its peculiarities are required to be displayed. Let the growth of the branches be observed; a straight line is rarely to be seen, nor do they spring from each other with uniformity; there is usually an undulating line, often graceful, or a wild luxuriance, ever pleasing, in these supports to the foliage. Let the effect of the leaves which may compose a principal mass be indicated, not the outline of a leaf or leaves, which would prove labour in vain, but what is seen as much by the imagination as the eye—that is, not the detail, but the effect. If too much regularity appear, destroy it by projecting a touch or two on the extremities, and attack any formality by additional markings, in conformity with the character adopted. Oftentimes the mere waving of the pencil, or a powerful repetition with the broad point, will not only remove a monotonous appearance, but communicate characteristic spirit and effect.

Experience has shown that while students could sketch the extremities of various branches of trees with good effect, they have felt embarrassed in giving a corresponding correctness to the mass, or masses of

Fig. 13.

foliage, belonging to the same tree. This has arisen from not having duly considered that each mass required to be treated as a centre, from which the character should be spread towards its respective boundary, with such discrimination as to obviate all appearances of formality, and then, by the introduction of repetitions of markings and touches, to arrange the separate parts, so as to preserve but one central mass, however it might be situated. A few trials, with the observance of these particulars, will remove the difficulty. Sometimes the hues of nature in their variety may at a future time be added. The light and shade in Indian-ink cannot be thus used as a basis, because under colour it is injurious to transparency. The light and shade in bistre is rich in mass, powerful in touch, and susceptible of giving transparency, with a high degree of finish. Either may be adopted, as the succeeding hints will apply to one as well as the other. Cakes of Indian-ink, of bistre, or of neutral tint, may be had of the venders of colours for artists. They should be free from grit; and when they are well ground, and duly incorporated with gum and white sugar-candy, they will deposit no sediment.

Flower-Drawing.—In connection with the drawing of foliage and trees, we should particularly recommend the practice of flower-drawing. At first you may copy drawings or prints of flowers, with a view to catching the mode of delineation in groups; nature, however, in this as in everything else, must be your true school, and to that we direct your attention. We press this advice in a particular manner on young mechanics who are studying ornamental design with a regard to their professions. No doubt, examples of ancient and modern ornament are of great value in this branch of drawing; but as Mr Hay justly remarks in his work on Colouring, 'flowers are your best practice, as you will now have obtained freedom of execution. To those who have gained a facility in copying the beautiful forms which prevail in the vegetable kingdom, and who have had such instructions in the use of water-colours as may enable them to copy individual flowers with ease, I would recommend the acquirement of a thorough knowledge of the laws of harmonious colouring. They will then be able to group and arrange flowers in the most agreeable and effective manner in regard to colour, as their previous experience must have taught them to accomplish in combination of form.

Dr Ure says, that "the modes in which taste is cultivated at Lyons deserve particular study and imitation in this country. Among the weavers of the place, the children, and all persons busied in devising patterns, much attention is devoted to everything in any way connected with the beautiful, either in figure or colour. Weavers may be seen in their holiday leisure gathering flowers, and grouping them in the most engaging com-

binations. They are continually suggesting new designs to their employers, and are thus the fruitful source of elegant patterns." Hence the French flower-patterns are remarkably free from incongruities, being copied from nature with scientific precision.

All these facilities for the improvement of our fancy manufactures are within the reach of the most humbl The pursuit of such a course of study as I have endeavoured to point out, would not only augment their sources of innocent pleasure, but lead them to other instructive pursuits. The youth, in searching for the most graceful and picturesque plants in nature's most profuse and wildest productions, would be naturally led to commence the study of botany, for he would then have some interest in the inquiry. And it may be easily imagined with what avidity the more advanced would add to his knowledge of that pleasing science, or the gratification he would derive from the study and practice of horticulture.

I need scarcely (continues this writer) point out the advantages to be derived from the cultivation of flowers by those engaged in designing ornamental patterns. The productions of a well-managed flower garden to such would be, in my opinion, of more real utility, as objects of study, than the contents of the Louvre. In those productions of nature they will find the most exquisite beauty and elegance of form, and even in single flowers, the most perfect combinations of colouring.

In saying that the study of such subjects is of more utility to the ornamental designer than that of those great works of art which have been the admiration of ages, I do not mean to undervalue the benefit that any one, and especially the artist, may derive from studying works of this description. I am aware that "the eye has its principle of correspondence with what is just, beautiful, and elegant, and that it acquires, like the ear, a habitual delicacy, and answers, with the same provisions, to the finest impressions. Being therefore versed in the works of the best masters, it soon learns to distinguish true impressions from false, and grace from affectation." I have therefore not the least doubt that those who have risen to some degree of eminence as ornamental designers, would reap great benefit in attaining a knowledge of the various styles and subtleties of colouring, by carefully studying and copying, in masses of colour alone, the best works of art to which they can get access, and applying these arrangements to the particular figures of their patterns.'

LIGHT AND SHADE—TINTING.

In every scene, during the presence of light, some parts fall immediately under the effect of the light, while others are thrown into shade. In art, advantage is taken of this mixture of light and dark parts, not only for the facility with which it enables the draughtsman to separate the parts of a scene, but for the agreeable effects which may be produced by the judicious association and distribution of the light and shade. In the representation of a round object, it is only by a careful disposition of the light upon the convex part, and the truth of the attendant reflected light and shadow, that the appearance of roundness is communicated. The means by which the effect of light and shade is to be produced by tints are now to be described. First, with regard to the preparatory steps in the process.

Provide the best *hard* drawing-paper, which may be had of various size and substance. For subjects in which minute and fine delineation is required, the paper should be smooth on the surface; but when the subject is of a rural character, in which all the shagginess of nature is to be introduced, the paper should be of a rough description, for roughness of surface in such a case will assist in giving truth to the representation. Drawing-papers have frequently a greasiness of surface, which prevents a tint from being spread with evenness; the slightest infusion of gall into the water with which the tint is made will remedy the defect; or the surface of the paper may be sponged with the gall and water before fastening it on the drawing-board.

A few camel-hair pencils must be provided; say two *flat inch tins*, to distribute a tint over a large space; two *swan-quills*, to wash in smaller spaces; and two *hen-quills*, to pick in minute parts. The qualities of these denominations of hair pencils are various. A bad one is far worse than a bad pen; with this it may be possible to write, but with a bad pencil every effort will be foiled. A proof of the quality may be made in the following manner, prior to purchase: When dipped in water, if it spring into a line with the quill, and retain its point, select it; if it spread into two or more points, reject it; and observe that it is not requisite for a pencil to be touched two or three times on the edge of a vessel containing water, nor to be passed between the lips, since these might give a point to a bad one. Provide also a few small delf saucers, in which to mix the tints, and two cups or glasses, to contain water; one to be preserved pure, and the other in which the pencils are to be washed.

The tints may be made according to taste: from Indian-ink, a black; bistre, a brown; or neutral tint, a gray: they are alike capable of communicating smoothness and spirit. With reference to further advancement in the art, it is proper to state that the light and shade of a landscape in the neutral tint is a basis on which the hues of nature in their variety may at a future time be added. The light and shade in bistre is rich in mass, powerful in touch, and susceptible of giving transparency with a high degree of finish.

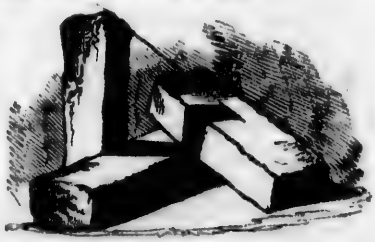


Fig. 14.

It may be observed, that the relief of an object depends on the just arrangement of the light, the due management of the half-tint and shade, with the proper introduction of the shadow.

Fig. 14 represents three rude stones full in the light, the line A showing the direction in which it falls. The shade-side of two, and the end of the third, show a play of light towards the lower parts, which is to be observed in nature. The shadow is marked stronger beneath, while that which is cast on the inclined stone is strongest at the base of the upright stone, and becomes lighter as it falls on the varying surfaces of the others.

Fig. 15.

Fig. 15 represents an acorn dislodged from its cup. The illumination is from the left, and falls on the rotundity of the acorn, the greatest light being on the most prominent part. In this case a slight portion of half-tint is placed along the upper edge, while the under side gradually approaches through half-tint to shade, and then softens into reflected light on the lower edge, which contributes to the character of smooth roundness, the power of the shadow beneath assisting in giving effect to the object. The light operates in the same

manner on the cup, being cast on the advancing part of the hollow; its shade is cast on the receding part opposed to the light, on the same principle that the exterior of the cup is treated, while the shadow relieves the half-tint, as in the previous instance. These plain and circular objects are introduced to call the student's attention to such natural objects, in which it may be there observed how admirably the lights and shades are intermingled with half-tints, so as to obviate all harshness or violent opposition, while the shadows give a due effect, harmonising the whole, and rendering the minutiæ worthy of the closest investigation.

Suppose you have made a sketch of such an object, at least six times the size of fig. 14, and that it is fastened down on the drawing-board; a few small saucers, and two vessels containing pure water, on the right hand near the pencils, with the window on the left, so that the sunshine does not fall on the drawing-board: Let a tint be made, according to the previous directions, from either of the cakes before-mentioned, and of any strength the student may think proper. Mix it well with the pencil to be used, and always let that be rather larger than might seem to be required—say, a swan quill. The pencil is properly charged for use when it has been stirred into the tint and gently touched, or passed two or three times on the edge of the saucer. This must be done carefully, because if the pencil contain too much tint, there is a difficulty in spreading it neatly, and the edges will be deficient in softness and delicacy. If the pencil contain too small a quantity, it will be impossible to spread the tint. If the space be large, it will require a little experience to keep the pencil equally charged with the tint.

Whatever may be the tint chosen, it must be washed over all the parts which do not receive the light. Thus with the pencil charged with tint, as before described, commence at the top of the perpendicular stone, fill in the form, and proceed by slow motions downwards, so as to keep the floating or lower edge of the tint constantly being acted upon by the pencil, while it is distributing the tint neatly to the shapes required. The pencil must not be returned to repair omissions, as that would destroy the evenness of tint; the parts should be washed in with correctness at the first. The pencil may then be carried across the shadow to the shade of the flat stone and its shadow on the ground, with attention to the edges; then the upper surface of the diagonally-placed stone, with its shade and shadow. If these spaces be well washed in, they will appear of one uniform power of tint. When it is perfectly dry, strengthen the tint in the saucer by an addition of colour from the cake; this increase of power to the tint must be judged of by experience in its application over the tint first washed in. If the subject be examined, it will appear to consist of three gradations of tint; that which has been spread is the first, as on the upper surface of the diagonally-placed stone; the second gradation of tint appears on all the other shaded parts; and the third gradation is confined to the shadows.

It may be noticed, that if too much colour is added to the first tint, it would produce a harsh effect; and if too little is added, the effect would be deficient: in either case, the due gradation would not be observed. Experiments may be made on a piece of paper, till the proper strength of the tint has been ascertained; it may then be applied to the shades and shadows as before, but omitting the upper surface of the diagonal stone. When this is perfectly dry, the tint must be again strengthened to the third gradation of power, with the same precautions as before; and with it wash in the shadows, keeping the edges of this tint rather within the boundaries of the preceding.

Mass, Half-Tint, and Shade.—Suppose such a scene as fig. 11 to have been sketched, and you are disposed to give effect to the outline by a few tints. Consider under what circumstances of light it has been seen in nature, or under what circumstances it might be seen. Imagine it an evening effect, the sun having descended behind the broad mass formed by the castle and trees; these, on different broken surfaces, constituting the second plan; beyond which is a mid-distance, terminating in water and remote hills; the foreground composed of a rude mass, with rock and bushes interspersed. With this outline you are presumed to be familiar, and will perceive that, by placing the light behind the principal objects, an opposition will be established that must give a character to the whole. Thus the principal will be in half-tint; the light brightest behind the castle, and gradually subdued along the distance; the foreground powerful, so as to relieve the half-tint of the principal, and oppose the distance; thus the gradations or keeping will be preserved, and effect given to the subject.

Attempt the subject, first on a small scale, to become acquainted with the process, and afterwards on one much larger, for improvement. With the first gradation of tint, as in the preceding cases, commence at the top of the tower, and proceed downwards by slow movements, so as to preserve the outline, sweeping the pencil round the masses of foliage, and covering all the second plan; continue the wash over the foreground, except the edge where the pieces of rock are situated; these may be omitted to relieve the mass from the second plan. When the tint is dry, make the second gradation of strength, and wash over again the trees and the ground on which they are situated. Then begin on the left on the foreground, and wash over the mass till within a little of the lights which were left untouched with the first wash. In these lights, and in repetitions of wash towards them, be careful not to let any perpendicular shapes appear; any promiscuous irregularity of form will better express ruggedness of surface. When this is dry, reduce a little of the first tint with water, and wash in the distant hills; then reduce the tint yet more, and with it wash in the space for the sky. As this may represent clouds, an even tint is not of material consequence; the pencil, therefore, should have less tint in it than usual. Begin at the angle on the left hand, and wash over the space, leaving such parts untouched as fancy may select, occasionally touching the extreme point of the pencil in the pure water, so that the tint may become still weaker as it approaches the part just above the castle. If this be well done, whatever may be the forms left untouched in the sky, the appearance will be that of a light or tender tint, getting gradually weaker and softer in a diagonal direction towards the chief light behind the castle.

In this state the drawing would exhibit some effect, and might receive any additional washes or touches that may be suggested by the taste or the judgment of the student. After obtaining a knowledge of the distribution of the tints in their gradations, let the subject be drawn again considerably larger, and now investigate the general principle which regulates the proposed effect, and effect on each particular part of the process, so as to comprehend the motive for every application of tint. When the tints are washed in, let the drawing be placed at some distance, where it can all be seen at once, without the surrounding objects interfering with the view. At this due removal, which is regulated by the size of the drawing, the gradations of distance and the keeping will more clearly show their correctness or inaccuracy. If the drawing be large, the flat tints on the second plan will tamely express masses of foliage, or the union of many trees; and the castle will require some characteristic markings. The black-lead pencil may be used upon the tint to indicate a variety of form on the building, or to separate the mass into trees of various heights, and these will serve as guides for the introduction of repetition of wash or touch. This proceeding implies finish, and may be carried to the extent dictated by the judgment of the student; but it must ever be borne in mind, that breadth of effect is injured by every addition that disturbs a mass. Variety may be introduced, so as to attack a monotonous space or mass without destroying it. Whenever it appears that more is required to com-

plete the drawing, and the improvement is not suggested by a glance, desist immediately; put the drawing aside, and engage on something else. In a few days, on recurring to the subject, it will be seen with a fresh eye; new ideas will arise; a little will be added, or a little power will be reduced, so as to effect an improvement which no straining of the faculties in the former instance could have produced. A drawing may thus be subjected to frequent revision, and retouched as an advance in taste shall direct.

Suppose such a subject as fig. 10 be sketched, for the purpose of study, in breadth of light, the opposite of the last effect: let a tint be made less powerful than the first gradation—such a tint as might represent clouds that were not gloomy—and with it wash over the space for the sky, preserving the forms of the trees, and softening off the tint in a diagonal direction, so as to leave the light along the horizon, with the greatest breadth on the right. When dry, repeat a few washes on the angle towards the left and along the top, so as to produce a gradation of power from the top to the horizon, and it will give the effect of retiring or keeping. If the tint has not been washed in with evenness, endeavour to convert any conspicuous form into a cloud, by picking or filling in on its edges a corresponding tint, so as to make it form part of another more appropriate shape. Then with that power of tint, considered as the first gradation, commence at a part not so high as the gable of the cottage, upon the trees, with an irregular form, distinct from a straight line, and continue the tint over the trees beneath, to the line of ground on which the cottage stands. Begin again at the lower part of the base beneath the cottage, and wash in the tint up to where the ground-line before-mentioned joins the boundary of the subject, and continue to wash in the tint, in agreement with the form of an indicated path to the cottage door, and so across to the mass of foreground and bush on the right. When all is perfectly dry, make the second gradation of power in tint, and wash over the lower portion of the trees close to the cottage, with the space before washed in, observing not to let it approach the edges of the previously-washed tint, lest the shapes should appear harsh, particularly on the bush opposed to the light horizon. It must be observed, that the power which was required to separate masses in outline, ceases to be proper on the application of tint, as there is no decided outline in nature. With the tint of the second gradation, wash in the door, the window, the shade of the roof with its shadow, and the shade side of the chimney. Then with the third gradation of power, wash in the foreground and the lower part of the bush, with the precautions before-mentioned. When dry, place the drawing at a due distance, according to its size; and observe, if the effect be that of a cottage in a mass of light, that the gable end cannot properly receive the same degree of illumination as the roof and the side where the window is; it will therefore be proper to wash over it a tint that will keep it in its place. You must reflect, that as the light is concentrated by the illumination from the right being poured upon the cottage, its relieving mass of half-tint will be lighter than on other occasions; therefore a tint lighter than the clouds will be sufficient to detach it from the brighter side, without destroying the mass of light in which the cottage is placed. As in the case of the preceding subject, any repetition of wash or touch that may seem to be required should be added, being careful to preserve the intended effect. A little practice will teach that the trees should be diversified with tender tints, so as not to destroy the mass of light; that the distant sea should be washed with a tint to relieve it from the horizon; that the ground on which the cottage stands may be broken or enriched with characteristic forms; and that the foreground may be touched with a power that shall judiciously detach it from the second plan.

In the examination of drawings, during the progress of retouching, if a part appear too light, or another part too dark, so as to produce the effect of *spottiness*, cover such part with the fingers, and imagine the appearance with any proposed alteration; if an improvement be suggested, at once adopt it, and examine again; always paying attention to preservation of the masses, on which both simplicity and effect depend. A drawing should be ascertained to have one *principal light*, while the subordinate lights diminish in brilliancy in proportion as they are removed from the principal. Masses of shade should increase in power of tint conformable to their degrees of remoteness. These are essential to keeping and effect. Making-out or marking more than the respective distances require, touches which are inappropriate, or harshness of any description, are all departures from the principles of the art, and deviations from natural appearances. Although effects may be observed in nature at variance with these rules—such, for instance, as light scattered equally on the foreground and the mid-distance, or the whole scene being beneath a glare of sunshine, or in shade by the clouded state of the atmosphere—yet these are effects unsuited for pictorial delineation, because they are deficient in what constitutes beauty and attraction in the art.

You may have observed how essential a sky is in giving effect to a drawing. The great variety of forms, lights, half-tints, and shades—the storm, the distant falling shower, and other incidental effects, which the atmosphere presents to the view, should always be regarded with attention, not only because advantage may be taken of such diversity for powerful contrast, but because a well-arranged sky is a beautiful portion of a landscape. The repetition of tender washes over each other may be justified only in the endeavour to obtain that tenderness and delicacy of tints which are conducive to faithful representation of clouds; for continuing to wash the same tint in successive applications will produce an effect that is termed *woolly*, from its being deficient in that *sharpness* or spirit which is obtained by a few decided tints applied in just gradations. These varieties may be adapted to the nature of the scene, and may, by their judicious contrasts of form and tint, contribute very materially to the general effect of a subject—as in a stormy sky, bright horizons, and beams of light. The effect of moonlight may readily be given by strong tints, softened off in the circular direction of the moon, and repeated till the gradation is obtained; then give a wash over the whole sky. *Take out* the clouds to a half-tint by dabbing, and *take out* the moon to the clean paper with crumbs of bread. A few catching lights on the clouds near the moon may be *taken out*, but made less bright than the moon.

HUMAN FIGURES.

A knowledge of drawing the human figure is to be gained by a careful study of the outlines of the different parts composing the trunk, limbs, and members. All such integral portions of the human figure, if time and other circumstances permit, may be first studied from casts conveniently placed on the table, so as to give a facility to the hand in this department of sketching.* It must, however, be borne in mind, that exercises of this nature, under the guidance of a master, do not obviate the necessity for studying the human figure from life; neither do they supersede the acquisition of a knowledge of figure-drawing on a small scale, for the purpose of ornamenting and giving effect to a scene from nature. The introduction of human figures is of considerable utility in drawing a landscape, in order to serve as a scale by which a spectator may know the probable measurements of objects near which the figures are situated; figures also give animation to a scene, and, by the touches of light or of dark which they justifiably offer, communicate valuable relief to a mass, or assist in the keeping of the subject.

There are several well-known rules with respect to the drawing of human figures; they are as follows:—

* Stucco casts of figures, and their subordinate parts, may be had from different manufacturers of models of this description in London, Edinburgh, and other large towns.

The height of a figure should be eight times that of its head; half its height is at the lower part of the body; a quarter of its height is at the knee. This division of the human figure can readily be put on the memory by

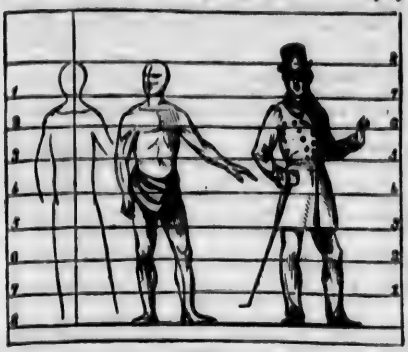


Fig. 16.

the following method:—Draw a perpendicular line, then divide it into eight equal parts; give one for the head, and, placing dots at each part in succession, give a second part for the breast, a third part for the centre of the abdomen, a fourth part for the lower portion of the body, a fifth part for the midway of the thigh, a sixth part just beneath the knee, a seventh part just beneath the calf of the leg, and the eighth part to the sole of the foot. The shoulders are two heads in width; the elbow is a head and a-half from the shoulder; and the arm, with straightened fingers, is three heads and a-half from the shoulder; that is, the fingers will reach down to the fifth division of the perpendicular. The measurements of the human figure, according to the highest standards of art, are exceedingly minute; but such are not necessary where a mere sketch of the form is required to enliven a landscape.

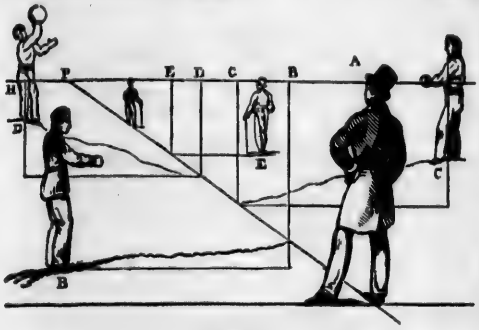


Fig. 17.

Fig. 17 exhibits the mode of ascertaining the heights of figures, wherever they may be placed in a scene, according to the rules of perspective. A is a figure on the base line; the eyes determine the height of the horizontal line H. Draw the visual rays from the head and feet of the figure A to the point of sight P, and the receding diminutions are determined, supposing the space to be a level surface. Where the situation of a figure is below the visual rays, as B, draw a parallel line from the feet of the figure towards the ray, and raise the perpendicular line B. Now, the measurement between the visual rays at B is the height of the figure required. When the situations of figures are above the rays, as at C and D, draw the parallels and the perpendiculars to their intersections beneath the elevations, and the measurements between the visual rays at C and D will give the respective heights of the figures required. The figure E being on a level with the base, a parallel line drawn from the lower ray will determine the height of a figure so situated.

Arrangement and Effect.—It may be proper to state that, in selecting scenes from nature, the expanse of vision, or 60 degrees, will often include more of the scenery surrounding an object than is required. On such occasions the boundary lines may be placed at pleasure, or so as to give the best effect to the principal. When a more expansive view is required to be taken than is contained within 60 degrees, the station becomes a pivot from which a succession of sketches, each 60 degrees of expanse, are to be taken. Thus any portion, or the whole circle, may be completed, forming what is termed a Panorama; always remembering that the points of sight and vanishing points are on the same horizontal line. Foregrounds may be added at pleasure; yet they should be consistent with the scene, and such as might have been on the spot. A foreground must ever be more or less imaginary, because the space between the objects which compose the scene and the spectator cannot be otherwise filled up. A human figure, should there be one very near, would appear as high as the horizontal line, and the lower extremities would be hidden; such unseemly representations are avoided, by supposing that the scene is viewed through a cavity in the side of a room, or a frame, which is the plane of the picture.

Large drawings require a bold treatment suited to the distance whence they are to be viewed, but the dimensions of a drawing give it no additional claim to notice. The situation in which a drawing is seen to the greatest advantage is when its horizontal line is immediately in front of the spectator's eye, and at such a distance that the whole can be seen without requiring the head to be moved. The beauty of linear perspective, more particularly in complicated architectural subjects, can only be seen to perfection from one point, and that is through an aperture immediately in front of the point of sight. The eye being placed close to an opening, in a card, for instance, and at such a distance as to embrace the whole subject, every line then becomes adjusted to the vision, and the diminution of surface in the drawing contributes to the truth of the effect, according to the appearances in nature.

Representations of landscape scenery have for many years been made by mechanical means, with the aid of the *camera lucida*, a species of box provided with a mirror and lens, in which the representations fall, and are therefrom copied by an attending artist into his sketch-book. The idea of fixing representations of this nature on the surface on which they fall, by some chemical process, so as to save the trouble of copying, appears to have been entertained by ingenious men both in France and England; and at length the possibility of doing so was made known at Paris in the month of January 1839. The discoverer was M. Daguerre, aided, however, by one or two other persons; and he was rewarded by the French government for making known the process which he pursued in the art, which was henceforth called Daguerreotype, or as frequently Photography (that is, drawing by the action of light). Since Daguerre's invention, various improvements and new discoveries have been made in the art of photography—all of which, as belonging more to mechanical and chemical than to imitative art, will be treated in a subsequent number. Some parties no doubt make use of these photographs in the composition of their pictures; but such a practice is more than questionable—it is simply copying in the worst sense of the term, and not trusting to that higher power of tracing and imitating external forms which must ever distinguish the legitimate artist from the empiric and pretender.

PAINTING AND SCULPTURE.

Drawing with black-lead pencils, chalk, or crayons, and Indian ink, constitute the first steps in a study of the fine arts. The more advanced studies refer to drawing in water-colours, paintings in oil-colours, and sculpture—three separate branches, individually followed as professions. It is not our intention to offer any instructions in these advanced departments of art, but to say only a few words as to the manner in which they are performed, and the advantages derivable from a contemplation of their varied products.

Drawings in water-colours are executed on thick hard paper, the outlines being lightly sketched with black-lead pencil. The colours are prepared in small oblong cakes; when required, a portion is rubbed down with water in a small saucer, and applied with a camel-hair pencil. Great care is necessary in laying on the respective colours; for the nature of the material wrought upon, and the transparency of the tints, prevent that freedom in rubbing out or obliterating one colour by another, which may be resorted to in oil-painting. For directions how to proceed, we refer to a small and accessible work on Water-Colour Drawing, by Mr John Clark. (W. S. Orr & Co., London.)

Oil-paintings are executed on a variety of materials, but chiefly canvas, stretched on a frame; less frequently on wood, copper, and slate. The canvas or other material requires to be prepared with a coat of paint, to give it a smooth surface, and to prevent the absorption of the colours afterwards laid on. The colours are ground and prepared with fine nut, poppy, or linseed-oil, and are ordinarily purchased by painters in bladder-bags, in a state ready for use. For convenience in using, a small portion of each colour required in the piece is placed on a thin oval board called a *palette*, which is held in the left hand, by passing the thumb through a hole at one extremity; the canvas frame is generally placed on a stand called an *easel*, in front of the artist, and the colours are applied with brushes of fine elastic hair. The colours being opaque, the painter has the opportunity of retouching his work, by putting one colour over another, when the previous colour has been thoroughly dried. Oil-paintings are sometimes executed on walls and the roofs of buildings; but paintings of water-colours on walls are the most ancient. These, known by the name of *fresco*-painting, are done while the surface of the plaster is moist, and admit of no retouching when the plaster dries. Specimens of fresco-painting have been found in Herculaneum and Egypt; still, after thousands of years, maintaining their brilliant colouring.

The greater number of sculptures, ancient and modern, are executed in single blocks of white marble; a few are in bronze. A sculptor commences by drawing his design on paper; when satisfied with this, he proceeds to form a model of his proposed figure in moist clay, supporting it partly by irons and framework. Having, as he thinks, brought his model to perfection as respects attitude and surface, it is ready to form a copy to work from; but as it is a perishable material, he takes a cast from it in plaster, and this cast serves as a mould for a fac-simile model in plaster of Paris. The plaster cast being hard and durable, it is used as the permanent copy by the different workmen. The first operative employed on it, by means of a machine, takes off the rougher parts of the marble, and gradually diminishes the block in the required directions. The next is an able assistant, who brings the figure still nearer in form to the copy; and it lastly passes under the hands of the sculptor, who gives that tasteful finish and spirit which the nature of the subject requires. Statues in bronze are cast in moulds taken from finished models.

With respect to the advantages derivable from a contemplation of the higher objects of art, they may be defined as the education of the eye and of taste, which is of particular importance to the draughtsman.

Addressing ourselves again to the pupil—you will observe that nature, though truthful, is not always consistently beautiful or graceful. We see living human figures less or more deformed, some tall and slender, others short and ungainly, and a third class out of proportion in the different parts of their person. Now to set about copying figures possessing any of these defects would be absurd; and you must in all cases endeavour to imitate only what is allowed to be nearest to perfection. Taking mankind in the gross, exceedingly few individuals come up to anything like a perfect standard. Fashions of dressing and habits of living, independently of original defects of form, conspire to throw the figure out of just proportion; so that a perfect man or woman, as respects bodily form and carriage, is practically out of the reach of all ordinary students. In London and elsewhere there are *life* academies, in which draughtsmen study from the best formed living figures that can be hired to exhibit themselves; and studies of this kind are indispensable for all who design following out the higher walks of art. Studies from sculptured figures are nevertheless desirable, because these are formed upon the highest ideality of grace, beauty, and perfection; and a contemplation of their exquisite proportions is believed to refine and discipline the tastes of the student. It is on this account that we append the present observations on this branch of the art.

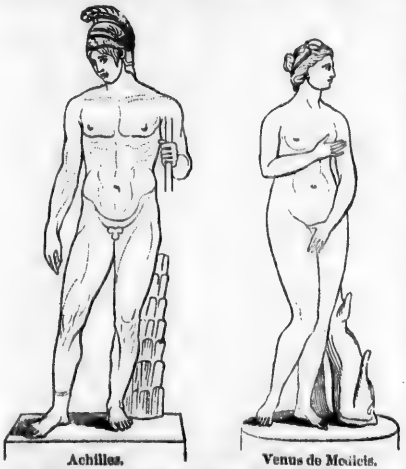
The figures which afford a recognised standard of perfection, are for the most part works of ancient Grecian art. The period in which the highest conceptions of personal perfection were formed, was during the administration of Pericles (about 440 years before the Christian era). In this age flourished Phidias, the greatest sculptor of ancient or modern times, who raised art from a comparatively rude to a very high condition. With him commenced what is called the *ideal style* of sculpture, in other words, a style aiming at an exalted conception of simple truth and grace. The religion of the Greeks, which was the idolising of deified heroes and heroines, offered the utmost scope for these lofty conceptions. His masterpieces were the figures of Pallas Athene and Jupiter, his Venus Urania, his Nemesis in the temple at Marathon, and his Amazon. He

Apollo Belvidere.

taught a number of others, among whom Alcamenes of Attica, and Agoracrites of Paros, were his favourite pupils. Both these sculptors executed several works which attained a high reputation. A contemporary was the famed Myron of Eleutheris in Bœotia, who represented highly-finished athletic forms. His Runner, his Slinger, and his Pancratists, are celebrated. His

ideal of Hercules completed this class of forms. His Heifer and his Sea-Monster are famous among his animal forms. But one thing was wanting to this great sculptor—grace of expression; in this he was surpassed by a rival sculptor, who adopted the undulating line of beauty, and first expressed the sinews and veins with accuracy. He created the ideal of Apollo in the position of an archer, who has just shot the serpent Python—the figure indicating in its expression a placid satisfaction and assurance of victory. This splendid work of art was found at Antium, the modern Capo d'Anzo, at the end of the fifteenth century. It was purchased by Pope Julius II., then a cardinal, and placed in that part of the Vatican called the Belvidere, whence it has been commonly named the Apollo Belvidere. The fore part of the right arm and the left hand, which had been destroyed, were restored by Angelo du Montorsoli, a pupil of Michael Angelo. The ease of the attitude and excellent proportions of the figure are universally admired. Our small outline engraving affords but an imperfect idea of the majestic original.

After the ideal style of Phidias and his disciples, succeeded the period in Grecian art distinguished for the *beautiful*. Praxiteles and Scopas were the great leaders of this improved style, in which beauty was united with grace. The most celebrated works of Scopas are his furious Bacchante—the head bending backwards, uniting the highest beauty with Bacchanalian frenzy; his Cupid, his Venus, and his Achilles, who is placed in a mournful attitude, contemplating as if lamenting the loss of his friend Patroclus. Praxiteles, the most feeling of all sculptors, created the perfect ideals of Diana and of Bacchus; the latter being designed by him as a contrast to the Satyrs and Fauns, whose figures express rudeness and licentiousness. The figure of Bacchus was soft and tender, without being effeminate, and expressed perpetual gaiety and sport. He effected also the admired statue of a Satyr, and the ideal of Eros, or Cupid, which was that of a playful boy. Praxiteles was the first to represent Venus entirely naked, thus giving to the world a new ideal of the goddess. His most celebrated works are his Venus of Cos and of Cnidos; the former covered from the hip downwards, the latter entirely naked, holding her garment with her left hand over the bath. The group of Niobe is also ascribed to this master.



Achilles. Venus de Medicis.

To the epoch which followed that of Praxiteles is usually ascribed the statue of Venus, styled the Venus de Medicis, from having been placed in the gallery of the Medici at Florence, after its discovery at Tivoli in 1695. It is of pure white marble, and measures, according to one authority, 4 feet 11 inches, and according to another, 5 feet 2 inches, in stature. Some small portions have been restored. It is not ascertained who was the sculptor of this exquisitely-designed figure. The pedestal exhibits the name of Cleomenes; but the inscription is modern. It has been the object of the artist to represent Venus either as just coming from the bath, on the point of dressing herself, taken by surprise, and full of modesty, or as appearing before Paris for his judgment in the contest with Juno and Minerva for the prize of beauty. By many the countenance is thought unintellectual, or at least unexpressive. The graceful waving lines of the body have never been surpassed; and, taken in different points of view, they offer a most advantageous study for ideal grace and beauty.

In this latter age appeared Lysippus of Sicyon, Euthycrates, Apollodorus, and others, among whom stand pre-eminent Polydorus, father and sons, of Rhodes, who formed the celebrated group of Laocoon. A number of great works of this era were executed by Greek sculptors at Rome, to whom we are indebted for many busts of distinguished Romans.

Among the numerous ancient sculptures, which, like those already mentioned, have survived until modern times, and been preserved in museums, may be mentioned the following as useful studies:—The Dying Gladiator, a naked manly figure, reclining on his shield, his weapon broken, and expiring from a mortal wound in the side: The Three Graces, a group of female figures in different attitudes, calculated to show the symmetry of the form in various positions: Antinous, the figure of a graceful youth, in a simple attitude, expressive of melancholy, and executed with great correctness of proportion: Adonis, a figure somewhat more slender and elegant: Venus Genetrix, a figure draped, and possessing a noble simplicity of expression; the drapery hanging in the most elegant folds, is in itself a study: Cleopatra meditating in a reclining position: Laocoon, a group of figures above referred to, consisting of a father and his two sons, struggling in the folds of serpents, and strongly characteristic of the distraction and suffering which may be conceived to be endured in that dreadful situation: Hercules, a figure expressive of robust muscular strength.

After a lapse of nearly ten centuries, the art of sculpture was revived in Italy, and thence spread to France and other modern nations. Germany has latterly produced various sculptors of eminence; among these may be mentioned Dannecker of Stuttgard, and Tieck of Berlin. Dannecker has executed, in pure white marble, a figure of Ariadne seated on a tigress, in an attitude of inexpressible elegance, and equal to the works of ancient art. It is contained in a private museum at Frankfort-on-the-Maine. Thorwaldsen, a Danish sculptor, has likewise produced several works of striking grandeur and beauty; not the least imposing of his designs is the colossal figure of a lion carved in the solid rock at Lucerne in Switzerland. The animal is supposed to be dying from the effects of a wound from a spear, and reclining over a shield emblazoned with *fleurs de lis:* it is a monument emblematic of the fidelity of the Swiss Guards who perished in defending their master Louis XVI., on the 10th of August 1792, from the brutality of the Parisian mob.

Canova, an Italian (born 1757, died 1822), has been justly esteemed the restorer of the graceful and lovely in sculpture. All his works display a surprising degree of softness and delicacy, and will form admirable studies to the young artist. His Cupid; Psyche, standing half-dressed, with a butterfly; the repentant Magdalene; Hebe, smiling and animated; a Venus, partially draped; Beneficence (several figures); Graces rising from the bath—are only a few of the works by which Canova gained his great reputation. Modern sculpture has likewise been distinguished by various works executed in England by Flaxman, Chantrey, Westmacott, Baily, and others. Modern art has almost reached the ancient in the figure of Eve at the Fountain, which is conceived

in a style of pure simplicity and grace, with somewhat more intellectuality in the features than is generally to be found in the Grecian sculpture of female figures.

Eve at the Fountain.

Besides studying the manifold graces of ancient and modern sculpture, with the view of improving the taste in reference to figures, you are recommended to study the styles and compositions of the more celebrated painters, as nothing could be more suitable for imparting correct ideas respecting drawing, disposal of groups of objects, and colouring. Another great benefit will consist in making you feel your own deficiency, and how much you require to attain by diligent study. Painting, you will learn, has, since the revival of art, taken the character of *schools*, or peculiar styles, each of which has had its leaders and followers; for example, there is the Florentine school, commenced by Michael Angelo Buonarotti (born 1474, died 1564), who delighted in representations of the grand and terrible. The Roman school, of whom Raphael (1483–1520) was the head. The great characteristics of this school are, truthful representations of nature, a just expression of the passions, a chaste nobleness of design, and correctness of drawing. The Venetian school, headed by Titian (1477–1576), the characteristics of which were the harmony of colours, delicacy of tints, and a judicious contrast of light and shade. This school was improved by Corregio and Tintoretto. The German school, led by Albert Durer (1471–1528) and Holbein. The second Lombard school, distinguished by the works of the three Caracci (1555–1609). The French school, founded by Nicholas Poussin (1594–1665), Vouet, and Charles Le Brun. The Flemish school was founded by Peter Paul Rubens (1577–1640), whose design is dignified, his drawing of anatomy and perspective correct, and his colouring brilliant. The only objection to some of his figures is, that they are too heavy; and certainly they want the grace of those of Raphael. The Dutch school, of which the most prominent painter is Rembrandt (1606–1668), is less distinguished for taste than the faithful adherence to nature.

The works of the eminent masters in these various schools were chiefly scriptural and historical; and scenes of a miscellaneous kind, embracing landscapes, figures, animals, sea-pieces, architecture, and other subjects, were painted by contemporary artists, who followed no particular school. Among these great masters may be named Claude Gelee of Lorraine (1600–1682), whose landscapes are exceedingly beautiful, his colouring delicate, his tints tender, and his lights and shades unrivalled; Salvator Rosa (1615–1673), whose taste was for the wild, rugged, and romantic aspects of nature; Gasper Poussin (1613–1675), whose pictures are grand and remarkably true to nature. The sixteenth and seventeenth centuries produced the following masters, all of whose works are esteemed:—Paul Veronese, Guido, Carlo Muratti, and Spagnioletto—historical; Murillo (Spanish)—figures; Hobbima—landscape; Canaletti—buildings; and De Witt—the interiors of churches. Vernet, a Frenchman of the eighteenth century, was celebrated for his sea-pieces and figures. In the course of the seventeenth century, Holland produced, but cannot be said to have encouraged, many distinguished painters. Among these are included David Teniers, celebrated for his representations of domestic and familiar scenes: Paul Potter, renowned for his cattle pieces, the most remarkable of which is his picture of a bull; it is contained in the Royal Museum at the Hague, and valued at £5000: Philip Wouvermans, noted for his landscapes, beautiful skies, and scenes with groups of figures hunting, or otherwise engaged in field-sports: Berghem, also noted for his landscapes, his foliage, cattle finely drawn and coloured; the woodland scenes of this painter are exquisitely finished and true to nature: Vandervelde, a painter of naval victories and sea-pieces, all remarkable for richness of composition and effect: Gerard Douw, like Teniers, famed for his domestic scenes. Jacob Ruysdael, who painted in the style of Berghem, but gained great celebrity for his representations of water.

All the eminent works of art, whether in sculpture or painting, are now contained in a few great national museums, or in the private collections of men of taste or opulence. The principal museums are those of the Vatican at Rome, the Gallery of the Medici at Florence, the royal galleries at Munich (now the head school of painting and other fine arts in Germany), the Louvre at Paris, the British Museum and National Gallery in London, and the Royal Museum at the Hague. If at all within the means of young men desirous of pursuing professions in which taste in drawing is requisite, we strongly recommend them to visit the Museum of the Louvre, which is rich in ancient sculpture and modern paintings: the sight of the many fine works of art in Paris would scarcely fail to inspire a high degree of refined taste. If unable to accomplish this desirable object, we advise you to pay occasional visits to any private collection to which you can gain admission, and also to exhibitions and museums open to the public. Among recent works of English art generally accessible, the historical pieces of Haydon and Hilton, the historical and pathetic pieces of Allan, the grand architectural idealities of Martin, the church and other architecture of Roberts, the landscapes of Gainsborough, Calcott, Mulready, Thomson, and the Nasmyths, the animals of Landseer, the sea-views of Stanfield, Turner, and Williams, and the faithful delineations of humble life by Wilkie, and many other works of art which might be mentioned, will afford much pure pleasure and instruction, and show what can be accomplished by a cultivated observation, and a persevering desire to excel.

In the course of your observations you will learn, that in the delineation of human figures great care requires to be paid to historical costume and the fashion of artificial objects represented. A person who lived in the eighteenth century, for instance, should not be dressed as an ancient Roman; nor should the interior of a house of the fifteenth be decorated like one of the sixteenth century. On this account every student of the fine arts requires to be well instructed in history, archæology, and other branches of learning. With respect to statues, it is so important to give an easy and graceful effect, that a departure from exact costume is allowable, so far as to place a loose garment over or about the person. A due perception of the beautiful and truthful in pictorial delineation must, however, be in all cases a work of time. At first, the unpractised eye, or, properly speaking, the untutored mind, will perhaps be most charmed with a gaudy daub, and see in the finest work of art only a dull and valueless scene. But the repeated contemplation of pictures, the comparison of one with another, and the constant reference to actual nature, will remove such impressions; and the work of true merit standing apparent, will receive the highest meed of approbation.

The last advice we have to give is, put away all envy of the progress of others, and be above those mean jealousies which too often impair the character of the artist.

GYMNASTICS—OUT-OF-DOOR RECREATIONS.

A DESIRE for indulging in active sports and exercises has evidently been given to youth for the admirable purpose of promoting bodily health and strength, at a period of life when mental occupation or sedentary employment would not only have been unfitting, but positively injurious. Instead, therefore, of railing at the boisterous pastimes of boyhood, ridiculous as they may sometimes appear, we ought to view them, so long as kept within the bounds of moderation, as consistent with a great providential design in creation, and worthy of our warmest approval and encouragement. Impressed with these considerations of the value of youthful recreations, particularly those carried on in the open air, we should by all means afford reasonable scope for all the usual and harmless sports in which young persons are pleased to indulge; we should say to parents, let the boy have his marbles, ball, nine-pins, and bat; and the girl her doll, skipping-rope, and hoop, besides any other toys which would call their respective faculties into harmonious exercise. But an indulgence in physical recreations and general amusements is not to terminate with the period of youth. In advanced and middle life, it is of the greatest importance to health to relieve the tasked brain, to soothe and compensate the drudgery of our current labours, and to bring into exercise those parts of our muscular frame and intellect which professional duty has left unoccupied. To young men, especially, whose frame requires regular and bracing exercise, those out-of-door recreations which afford a certain degree of amusement are indispensable; and to them the contents of the present sheet are more particularly submitted. Our endeavour will be to point out what sports may with propriety be indulged in, suitable to the different seasons of the year, and how they may be pursued with advantage to health and other circumstances.

GYMNASTIC EXERCISES.

Gymnastics are those exercises of the body and limbs which tend to invigorate and develop their powers.* In an ordinary course of living, without due regard to rules for promoting bodily strength, the frame becomes relaxed, the muscles are soft, the circulation of the blood languid, the bones and joints debilitated, and the stomach weakened and dainty. To avert, as far as possible, these imperfections, gymnastics ought to form a part of education in youth, when the joints and muscles are flexible, and time is permitted for the various kinds of exercises. 'To be largely useful to the wellbeing of the economy,' says Dr Robertson, 'the exercise must not be confined to any set or series of muscular movements; but, as far as possible, should bring into play all the moving powers of the body. It may be said, in general terms, that the greater the number of muscles concerned in the exercise, and the more completely it involves the full contraction of each muscle, the more influential will the exercise be.'

Precaution.—It has not been unusual of late years to conduct the gymnastics of schools on an improper scale, by impelling young persons of comparatively feeble frames to undertake feats and exercises which have been at variance with the bodily organisation, or at least highly dangerous, and of no practical value. A caution is necessary on this subject. 'The best guide we can have,' observes Dr Andrew Combe, in his work on Physiology, 'is to follow the footsteps of nature, whether it is in harmony with the mode of action assigned by the Creator to the parts which are to perform it. If it be so, we may proceed with perfect confidence that it will not only improve the health, but add to the freedom, elegance, precision, and strength of our movements; whereas, if it be opposed to the obvious intention of the Creator, we may rest assured that no good can accrue from it. If, for example, we examine the various attitudes and motions of the body which occur in fencing, dancing, swimming, shuttlecock playing, and some of the better class of gymnastic exercises, we find that they are not less graceful and beneficial to the young who engage in them, than pleasing to those by whom they are witnessed—just because they are in perfect harmony with nature, or, in other words, with the structure and mode of action of the joints, ligaments, and muscles by which they are executed. But it is far otherwise with some of the anomalous exercises which were at one time so fashionable, and which are not yet extinct in schools and gymnasia, and which seem to have for their chief object the conversion of future men and women into foresters, firemen, or savages, rather than into beings who are to continue to have the use of stairs, ladders, carriages, steamboats, and the other conveniences of civilised life. It is no doubt a good thing for a boy to be able to climb up a perpendicular pole or a slippery rope, when no other means present themselves of attaining an important object at its upper end; and it is an equally good thing for a young lady to be able to sustain her own weight hanging by one or both hands, when there is no possibility of resting her feet on terra firma; and where boys and girls are strong enough to take pleasure in such amusements, there is no great reason to hinder them, provided they are impelled to them, not by emulation or any secondary motive which may lead to over-exertion, but by the pure love of the exercise itself. In all ordinary circumstances, those only who are vigorously constituted will attempt them, and if left to themselves, will be sure to desist before any harm can be done. But the case is entirely altered when such extraordinary evolutions are not only encouraged, but taught to all indiscriminately, whether they are strong or weak, resolute or timid. We have only to reflect for a moment on the structure of the shoulder joint, and on the sphere of action of the muscles surrounding it, to perceive at once that the position of the one and the strain upon the other, caused by the exercises alluded to, are so forced and unnatural as to exclude the possibility of the Creator having intended either to be practised except upon occasions of urgent necessity, and to discover how preposterous it is therefore to make them a subject of general instruction. Nay, the very violence of the effort required to sustain the body when hanging by the hands, is far beyond that moderate exertion which adds to nutrition and to strength; and in delicate subjects it may even induce relaxation and stretching of the ligaments and blood-vessels, and thus, as in the case of the young men at Cambridge, lay the foundation for future and fatal disease. The same remarks apply to a common practice of making the pupils slide down an inclined plane resting on the hands alone, by which unnatural effort the shoulders are pushed half way up the neck, and the wrists, arms, and chest severely tried. But in these and other similar evolutions, it requires only to look at the dragging and distortion which they produce, and which form such a painful contrast to the ease and

* The term *gymnastic* is from a Greek word signifying *naked*, the athletæ or young persons who practised bodily exercises in the public arena or gymnasium of ancient Greece, being, for freedom of motion, nearly in a state of nudity. The more gentle kind of gymnastics for females are termed *calisthenics*, from words signifying elegant or graceful exercises.

grace of all natural motions and attitudes, to perceive that they are out of the order of nature, and that neither health nor elegance can result from them. In the selection of exercises for the young, then, we should not be misled by a vain desire of surmounting difficulties and performing feats at the serious risk of inducing aneurism or rupture, but rather endeavour to strengthen the body by active amusements, which shall call the social and moral feelings and intellect into play at the same time, and by the practice of such gymnastic evolutions only as tend to improve and give tone to the natural action of the moving powers. And in endeavouring to attain this object, we should be always careful to avoid great fatigue, and to modify the kind, degree, and duration of the exercise, so as to produce the desired results of increased nutrition and strength; and to remember that the point at which these results are to be obtained, is not the same in any two individuals, and can be discovered only by experience and careful observation.' With the precautions suggested by these observations, the following gymnastic exercises may be pursued:—

General Directions.

The exercises are best performed in an open court or piece of ground, firm below, but without any stones to injure the feet or person; a grass plot is the most suitable. The fittings are a climbing stand, vaulting bar, leaping poles, &c. The dress of the gymnast is to consist of easy-fitting trousers, and encircled with a belt or girth. The belt should pass round the loins, and not be too tight. The performances should be in the forenoon, or at least before any heavy meal.

Positions and Motions.

Fig. 1.

The body must be drilled in the art of standing and throwing out the limbs. In standing properly, the person should be erect, the head held up, and the face looking straight forward; the shoulders are to be square, with the chest fully exposed, so as slightly to curve the back; the legs closed; the heels in a line, and closed; the toes turned out; the arms hanging straight down; the elbows held in to the body; the hands open to the front; the little finger touching the legs; and the thumb flat to the forefinger. When perfected in the art of standing in this position, which is called *attention*, as shown in fig. 1., the next thing is to be taught to march or walk, as in the case of a soldier on drill, the feet being alternately thrown out, and both brought together into position, at the order to halt.

Fig. 2.

The pupil next learns to bend the body and extend the arms. The first exercise of this kind is to carry the hands to the front, the fingers lightly touching at the points; now raise the arms, the hands still together, till they are held over the head, as in fig. 2.

The second motion is to learn to hold the arms out in front, the tips of the fingers touching, and returning to the position of fig. 1: this is to be done repeatedly. The third is to extend the hands separately, and raise them over the respective shoulders, the fingers pointing upwards. The fourth motion is to keep the arms and legs straight, and to bend the body forward, with the head down, and the tips of the fingers towards the ground. This somewhat difficult motion is represented in fig. 3.

Fig. 3.

A fifth motion is to resume the position of attention, allowing the arms to fall freely to their place, but still without bending the legs. These motions are trying to the pupil, and should be done gradually; the great object is to exercise the muscles bit by bit, and perfection is not desirable at first. Then follow other motions—as throwing the arms horizontally out in opposite directions, swinging the arms, stretching them to the full extent forward, while the palms are in contact, doubling the arms up so as to make the tips of the fingers rest on the shoulders, making the palms come fully in contact while the arms are thrown behind back, &c. In these, it is of importance to exercise the left hand and arm fully more than the right, in order to make them equally active and strong.

Indian Club Exercises.

The pupil having advanced in simple personal exercises, is supposed to be somewhat strengthened; and to further the operation, he proceeds to the Indian club exercise. The main object is to expand the chest, and increase the power of the arms. For this end some sedentary persons regularly exercise themselves with dumb-bells; that is, heavy pieces of metal, one being held in each hand. The club exercise is an improvement on that of the dumb-bells. The club bears a resemblance to the bat for cricket, and varies in weight from two to twelve pounds. One is used in each hand. The following, according to Torrens, are the regulation-exercises now adopted in the army:—

'The recruit being placed in the position of attention, with a club in each hand pointing downwards, as in fig. 4, must be exercised as follows:—

Fig. 4.

First Part.—1. At the word *one*, the club in the right hand is slowly carried round the head, until the hand arrives in a perpendicular line above the shoulder, with the large end of the club pointing in a diagonal direction to the rear; 2. The club in the left hand is raised in a similar manner, and carried over that in the right hand till it reaches a corresponding position; 3. The hands are carried slowly to the right and left, until they become in a true horizontal line with the shoulders, the large ends of the clubs still remaining to the rear; 4. The hands are brought slowly to the first position. Care must be taken that the recruit does not stand with a hollow back during this and the succeeding practice.

Second Part.—1. Raise both hands to the front, approaching them close together, in horizontal line with the shoulders, the clubs being held perpendicular, with the large ends upwards; 2. With the body well poised forward, separate the hands, and carry them to the right and left line with the shoulders, the large ends of the clubs remaining upwards; 3. With the head well kept up, let the clubs turn over till they point in a diagonal direction to the rear, the hands still remaining out in a line with the shoulders; 4. With the arms extended, drop them slowly to the first position.

Fig. 5.

Third Part.—1. The club in the right hand is circled round upon the *right* of the body for a few revolutions of the circle, or until the word *halt* is given; 2. The one in the left hand is used in the same manner on the *left* of the body, until the word *halt* is given, when the recruit will remain perfectly steady in the first position; 3. With the body rather leaning forward, circle both clubs at the same time, on the right and left of the body, until ordered to halt.'

Leaping—Vaulting.

The simplest kind of leaping is that of jumping on level ground from one point to another, with or without a run. The run accumulates power in the person, or momentum, and enables a person to leap considerably farther than without such an aid. 'In all kinds of

leaping,' observes Walker in his 'Manly Exercises,' 'it is of great importance to draw in and retain the breath at the moment of the greatest effort, as it gives the chest more solidity to support the rest of the members, impels the blood into the muscular parts, and increases their strength. The hands, also, should be shut, and the arms pendent. The extent of the leap in height, or horizontally, is proportioned to the power employed and the practice acquired. As it is performed with facility only in proportion to the strength exerted, and the elasticity and suppleness of the articulations and muscles of the lower extremities, much exercise is necessary to attain that degree of perfection which lessens all obstacles, and supplies the means of clearing them without danger. Lightness and firmness are the qualities necessary for leaping; everything should be done to acquire these two qualifications, for without them leaping is neither graceful nor safe.' Pupils begin by leaping short distances and no great height, and as they become expert, the feat is increased. To regulate the exercise, a leaping-stand is employed; it consists of two movable posts, about six feet high, having, above eighteen inches from the ground, holes bored through them, at the distance of an inch from each other; a rope stretched across from pins, and held tight by sand-bags, is the bar to be leaped over.

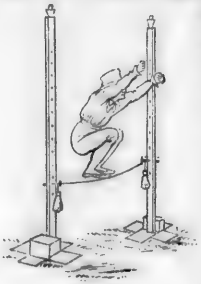


Fig. 6.

In leaping *without* a run, hold the legs and feet closed, bend the knees well up, hold forward the head, and throw out the hands, as in fig. 6. Skill in throwing forward the body with a jerk, thus doubled up, is only acquired by experience. Let great care be taken to descend with an inclination forward, and to fall on the fore-part of the feet, so as to touch the ground lightly, and by the spring or elasticity of the feet and limbs, to deaden the shock.

In leaping *with* a run, the run preceding the leap should never exceed ten paces; the rise into the air to take place at a distance from the cord equal to half the height of the cord from the ground. Skill should be attained in leaping from either foot, or from the spring of both feet. It is considered a good leap when five feet are cleared; a first-rate one is five and a-half; and an extraordinary one six feet; few, however, ever reach more than four feet. For a man to leap his own height—that is, for a man of six feet to leap six feet high, or a man of five feet eight inches to leap five feet eight inches high—is usually considered the perfection or ultimatum of the high leap. It may be noticed, however, that, all things considered, the man of medium size (about five feet eight inches) is almost always the most successful at this species of exercise.

What is gained in height is lost in distance. To make a long leap, therefore, it is not necessary to go high. The measurement of long leaps is by marks on level and soft ground, and he who clears the greatest number of marks is the most proficient. As in high leaping, the body must be inclined forward, and the spring made from the balls of the toes. To clear twelve feet without a run is considered a good leap. With a run of ten to fifteen paces, increased in velocity as the runner approaches the springing point, a leap may be performed of fourteen or fifteen feet. In this running leap, it is best to spring from the foot in which there is most proficiency, and to rise to a moderate height from the ground; too low a spring defeats the desired end, as must be evident to every one at all acquainted with the doctrines of Projectiles.

Leaping from a high to a low situation is another useful exercise. To acquire proficiency in it, begin with moderate heights, and learn to fall softly on the balls of the toes, or fore-part of the feet. If the fall be upon the heels, the whole body is almost certain to be jarred, and the legs stove. Keep the body compact in the descent, with the hands well forward, so that, when alighting, the person may spring lightly up from a crooked or bent posture.

Vaulting is that kind of leaping in which the body is helped forward by a momentary leaning on an object by the hands. The art of vaulting may prove useful in many circumstances in life, as, for instance, in getting quickly over a paling, fence, or gate, to elude danger. Exercises are performed with vaulting bars, of which an illustration is given in fig. 7; they are of various heights, and some are shaped like a horse with a saddle.

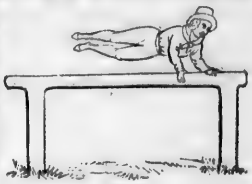


Fig. 7.

Vaulting is performed with or without a run. The spring, as usual, is from the toes; and resting the hands on the bar, the legs are raised, and, by a jerk, pitched over to the other side. The pupil is to learn to vault in this manner, either towards the left or right. When perfect in the exercise, he learns to vault straight forward over the bar, between his hands, in which feat very great skill is necessary in doubling up the body and limbs during the spring. The methods of vaulting on and off horse-blocks are innumerable.

Leaping with a pole is a combination of simple leaping and vaulting, and is also a most useful and an elegant accomplishment. The pole should be smooth, light, and from seven to ten feet long. Held in the hands, as represented in fig. 8, the left hand below and the right above, the pole is planted with its lower point on the ground, and by a spring from the left foot, the body is impelled through the air to the desired distance.

Fig. 8.

In performing this exercise, the pupil must learn not to lean too much on the pole, and not to keep too close to it. The knack of pole-leaping is, like all other kinds, dependent on the spring of the feet, and the presence of mind in throwing the body forward lightly and gracefully. The best plan is to begin with short leaps across ditches, and to increase the distance as expertness is acquired. When the method of springing from a fixed situation is acquired, proceed to advanced practice by making a run, a rapid plant of the pole, and a spring to a considerable distance, as across a brook of twelve or fifteen feet in width.

The next step is to learn to vault over a high object by means of the pole. Two posts and a cross cord, as in fig. 9, are usually employed in this exercise. The leap is taken by a run, and 'upon this run,' observes Walker, 'principally depend the facility and success of the leap. As the spring can take place only with one foot, and as this must arrive correctly at the springing place, it is necessary that the order of the steps should be arranged so as to effect this object. The fixing of the pole in the ground and the spring must take place at the same instant, because by that means the upper and lower members operate together; no power is lost, and the swing is performed with the greatest facility. The leaper must carefully observe that the spring of the foot, and

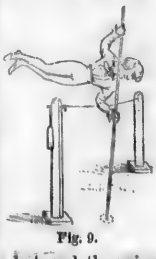


Fig. 9.

the plant of the pole, are in the direction of (in a line with) the preparatory run.'

Carrying Weights.

A regular course of gymnastics embraces the art of lifting and carrying weights; but lessons in these exercises must be conducted with much caution, and only when the body has been otherwise well disciplined.

In lifting a weight, power is best exercised by doubling the body, as if about to sit down; the hands then grasp the ring of the weight placed between the feet, and the body gradually straightening, the arms rise with it, and lift what is in the hands. By this means the whole force of the body is exerted, and no part more than another.

Loads of any kind are most advantageously borne on the back and shoulders, with the body erect. The arrangement of knapsacks on the backs of soldiers is on this plan, the weight depending from each shoulder, and not hanging too low. The closer the load is to the shoulder, the shorter is the lever, and the less the pull on the point of resistance.

A man exercises his power of draught with the greatest advantage by pulling a rope over his shoulder, for in this case he throws forward the weight of his person, and he acts both by muscular energy and weight. The least advantageous exercise of his power is to carry a load up a ladder; for he has to carry up his own weight as well as the load which is on his shoulders.

Walking—Running.

The art of walking with ease, firmness, and grace, forms a necessary part of gymnastic or drill exercises. Few persons walk well naturally; the constraint of dress, distortion from labour, or bad habits of some kind, generally contributing to give a slounge to the figure, and an awkwardness to all the motions.

To walk gracefully, the body must be erect, but not stiff, and the head held up in such a posture that the eyes are directed forward. The tendency of untaught walkers is to look towards the ground near the feet; and some persons appear always as if admiring their shoe-ties. The eyes should not thus be cast downward, neither should the chest bend forward to throw out the back, making what are termed 'round shoulders;' on the contrary, the whole person must hold itself up, as if not afraid to look the world in the face, and the chest by all means be allowed to expand. At the same time, everything like strutting or pomposity must be carefully avoided. An easy, firm, and erect posture, is alone desirable. In walking, it is necessary to bear in mind that the locomotion is to be performed entirely by the legs. Awkward persons rock from side to side, helping forward each leg alternately by advancing the haunches. This is not only ungraceful, but fatiguing. Let the legs alone advance, bearing up the body. In setting down the feet, let the outer edge of the heel first touch the ground, and the sole of the foot bear and project the weight of the body. The length of step is of course to be determined by the length of limb. Efforts at taking long steps, out of proportion to the power of motion, are always ungraceful. Reckoning from heel to heel, or toe to toe, the length of a military step at drill march is thirty inches, which is considerably more than the length of ordinary steps in walking. The length of step at a moderate pace, of a man five feet nine inches high, is usually twenty-four inches; and this will be found a convenient length for most persons to acquire the habit of using.

The motion of the arms to and fro, in cadence with the movements of the legs, greatly helps the locomotion, and is advantageous in exercising the muscles of the shoulders, and expanding the chest. The motions of the arms, however, should be on a moderate scale, the hands not swinging through a greater space than eight or nine inches before and behind the leg. The practice of working forward the shoulders and swinging the arms at a great rate is most odious. It may be added, that the art of comporting the hands—that is, of keeping them down in an easy, quiet position, and without meddling with the person—is one very necessary in polite behaviour, and should be acquired by all young persons, before bad habits are confirmed.

Running is a rapid leaping kind of walk, the leap being from each foot alternately, and the motion being promoted by throwing forward the weight of the person. The following are Walker's definitions of running, which we illustrate by fig. 10:—'The upper part of the body is slightly inclined forward; the head slightly thrown backward, to counteract the gravity forward; the breast is freely projected; the shoulders are steady, to give a fixed point to the auxiliary muscles of respiration; the upper parts of the arms are kept near the sides; the elbows are bent, and each forms an acute angle; the hands are shut, with the nails turned inwards; and the whole arms move but slightly, in order that the muscles of respiration on the chest may be as little as possible disturbed, and follow only the impulse communicated by other parts. There exists, in fact, during the whole time of running, a strong and permanent contraction of the muscles of the shoulder and arm, which, though very violent, is less serviceable to the extended movements than to keep the chest immovable, toward which the arms are brought close, the flexors and adductors of which are especially contracted.

Fig. 10.

At every step the knees are stretched out, the legs kept as straight as possible, the feet almost graze the ground, the tread is neither with the mere balls of the toes nor with the whole sole of the foot, and the spring is made rapidly from one foot to the other, so that they pass each other with great velocity.

Speed, and still more duration in running, are in proportion to the development of the lungs, and consequently the volume of oxygen and blood which they can combine in their parenchyma at each respiratory movement. Thus of two men, one having the abdominal members developed, and the other possessing good lungs, the former will run with the greatest speed for a short distance; but if the distance be considerable, he will soon be gained upon by the latter. A runner, after performing a certain space, is seized with a difficulty of breathing long before the repetition of the contractions has produced fatigue in the abdominal members. To excel, therefore, in running, requires, like walking and dancing, a peculiar exercise. As the muscular contractions depend, for their principle of excitement, on the respiration, the chest should be firmly fixed, so as both to facilitate this, and to serve as a point of support for the efforts of the lower members. The best runners are those who have the *best wind*, and keep the breast dilated for the longest time.

During the whole time of running, long inspirations and slow expirations are of the greatest importance; and young persons cannot be too early accustomed to this practice. To facilitate respiration towards the end of the race, the upper part of the body may be leant a little forward. Running should cease as soon as the breath becomes very short, and a strong perspiration takes place.'

Exercises in running should commence with very moderate distances, and for short periods of time; and great or fatiguing feats are only to be attempted after the body and lungs are strengthened by training.

TRAINING.

The method of training in modern times for pedestrian feats and other laborious undertakings, does not differ materially from that pursued by the ancient Greeks. The great object is to increase the muscular strength, and to improve the free action of the lungs

or wind of the person subjected to the process. The means adopted to accomplish the end in view is evacuation, to cleanse the stomach and intestines; sweating, to take off the superfluous fat and humours; daily exercise, to strengthen the muscles and system generally; and a peculiar regimen to invigorate the body. And to this we add the use of the tepid bath, to remove impurities and promote a healthy action in the skin. We present the following graphic account of the process of training from 'Walker's Manly Exercises:'—

'The most effectual process for training appears to be that practised by Captain Barclay, which has not only been sanctioned by professional men, but has met with the unqualified approbation of amateurs. We are here, therefore, almost entirely indebted to it for details. According to this method, the pedestrian, who may be supposed in tolerable condition, enters upon his training with a regular course of physic, which consists of three doses. Glauber's salts are generally preferred; and from one ounce and a-half to two ounces are taken each time, with an interval of four days between each dose. After having gone through the course of physic, he commences his regular exercise, which is gradually increased as he proceeds in the training.

When the object in view is the accomplishment of a pedestrian match, his regular exercise may be from twenty to twenty-four miles a day. He must rise at five in the morning, run half a mile at the top of his speed up-hill, and then walk six miles at a moderate pace, coming in about seven to breakfast, which should consist of beefsteaks or mutton-chops under-done, with stale bread and old beer. After breakfast, he must again walk six miles at a moderate pace, and at twelve lie down in bed, without his clothes, for half an hour. On getting up, he must walk four miles, and return by four to dinner, which should also be beefsteaks or mutton-chops, with bread and beer, as at breakfast. After dinner, he must resume his exercise, by running half a mile at the top of his speed, and walking six miles at a moderate pace. He takes no more exercise for that day, but retires to bed about eight; and next morning he proceeds in the same manner.

Animal diet, it will be observed, is, according to this system, alone prescribed, and beef and mutton are preferred. All fat and greasy substances are prohibited, as they induce bile, and consequently injure the stomach. The lean of meat contains more nourishment than the fat; and in every case the most substantial food is preferable to any other kind. Fresh meat is the most wholesome and nourishing. Salt, spiceries, and all kinds of seasonings, with the exception of vinegar, are prohibited. The lean, then, of fat beef cooked in steaks, with very little salt, is the best; and it should be rather under-done than otherwise. Mutton, being reckoned easy of digestion, may be occasionally given, to vary the diet and gratify the taste. The legs of fowls are also esteemed.

It is preferable to have the meat broiled, as much of its nutritive quality is lost by roasting or boiling. It ought to be dressed so as to remain tender and juicy; for it is by these means that it will be easily digested, and afford most nourishment. Biscuit and stale bread are the only preparations of vegetable matter which are permitted to be given; and everything inducing flatulency must be carefully avoided. In general, the quantity of aliment is not limited by the trainer, but left entirely to the discretion of the pedestrian, whose appetite should regulate him in this respect.

With respect to liquors, they must be always taken cold; and home-brewed beer, old, but not bottled, is the best. A little red wine, however, may be given to those who are not fond of malt liquor; but never more than half a pint after dinner. It is an established rule to avoid liquids as much as possible; and no more liquor of any kind is allowed to be taken than is requisite to quench the thirst.

After having gone on in this regular course for three or four weeks, the pedestrian must take a four-mile sweat, which is produced by running four miles in flannel at the top of his speed. Immediately on returning, a hot liquor is prescribed, in order to promote the perspiration; and of this he must drink one English pint. It is termed the sweating liquor, and is composed of one ounce of caraway seed, half an ounce of coriander seed, one ounce of root-liquorice, and half an ounce of sugar-candy, mixed with two bottles of cider, and boiled down to one half. He is then put to bed in his flannels, and being covered with six or eight pair of blankets and a feather bed, must remain in this state from twenty-five to thirty minutes, when he is taken out, and rubbed perfectly dry. Being then well wrapt in his greatcoat, he walks out gently for two miles, and returns to breakfast, which on such occasions should consist of a roasted fowl. He afterwards proceeds with his usual exercise.

These sweats are continued weekly till within a few days of the performance of the match; or, in other words, he must undergo three or four of these operations. If the stomach of the pedestrian be foul, an emetic or two must be given about a week before the conclusion of the training. He is now supposed to be in the highest condition for his feat.

Besides his usual or regular exercise, a person under training ought to employ himself in the intervals in every kind of exertion which tends to activity, such as golf, cricket, bowls, throwing quoits, &c. so that, during the whole day, both body and mind may be constantly occupied. Although the chief parts of the system depend upon sweating, exercise, and feeding, yet the object to be attained by the pedestrian would be defeated, if these were not adjusted each to the other, and to his constitution. The trainer, before he proceeds to apply his theory, should make himself acquainted with the constitution and habits of his patient, that he may be able to judge how far he can with safety carry on the different parts of the process. The nature of the patient's disposition should also be known, that every cause of irritation may be avoided; for as it requires great patience and perseverance to undergo training, every expedient to soothe and encourage the mind should be adopted.

The skilful trainer will, moreover, constantly study the progress of his art, by observing the effect of its processes, separately and in combination. If a man retain his health and spirits during the process, improve in wind, and increase in strength, it is certain that the object aimed at will be obtained; but if otherwise, it is to be apprehended that some defect exists, through the unskilfulness or mismanagement of the trainer, which ought instantly to be remedied by such alterations as the circumstances of the case may demand. It is evident, therefore, that in many instances the trainer must be guided by his judgment, and that no fixed rules of management can, with absolute certainty, be depended upon for producing an invariable and determinate result. In general, however, it may be calculated that the known rules are adequate to the purpose, if the pedestrian strictly adhere to them, and the trainer bestow a moderate degree of attention to his state and condition during the progress of training.

It is impossible to fix any precise period for the completion of the training process, as it depends upon the previous condition of the pedestrian; but from two to three months, in most cases, will be sufficient, especially if he is in tolerable condition at the commencement, and possessed of sufficient perseverance and courage to submit cheerfully to the privations and hardships to which he must unavoidably be subjected. The criterion by which it may be known whether a man is in good condition—or, what is the same thing, whether he has been properly trained—is the state of the skin, which becomes smooth, elastic, and well-coloured, or transparent. The flesh is also firm, and the person trained feels himself light and full of spirits. In the progress of the training, his condition may also be ascertained by the effect of the sweats, which cease to reduce his weight; and by the manner in which he performs one mile at the top of his speed. It is as difficult to run a mile at the top of one's speed as to

walk a hundred; and therefore, if he performs this trial well, it may be concluded that his condition is perfect, or that he has derived all the advantages which can possibly result from the training process.'

PEDESTRIAN FEATS.

Prepared by training, and acting under certain precautions as to food and rest, a person may perform very surprising feats of pedestrianism. He may, for instance, completely out-travel a horse, by walking for days continuously from thirty to forty miles, and yet be as fresh at the end of his journey as at the beginning. Without preparatory training, however, the most fatal injuries may be committed in attempting pedestrian feats. We must offer some precautionary advices on this subject:—

Advices to Young Men on Walking Excursions.

Young men who break away from regular, and perhaps sedentary, employment, to take a walking excursion of a few days in the country, often commit such grievous errors as mar their enjoyments, and deprive themselves of all the benefit they had calculated upon as the proper result of an exemption from ordinary duty. With soft and relaxed frames, they in many instances address themselves to walk such a distance each day as only could be conveniently walked by a person accustomed to such tasks. Accordingly, by the end of the second day at farthest, their feet are all over with blisters, their strength is completely exhausted, and their whole system is in a fever of nervous agitation, the consequence of enormous voluntarily-incurred suffering. The next morning, perhaps, sees them a little recovered, and, with their small stock of renewed strength, soaped stockings, and a vigorous resolution, they set out upon the third day's travel, which probably concludes by leaving them in a worse state than before. There is no time, however, to wait for a perfect recovery; so they travel on, and probably complete their excursion in a miserable dragging fashion, glad to get over the country without enjoying it, so that they only have the prospect of being again speedily at home and at rest.

This is the unavoidable consequence of ignorance and want of reflection. The excursion might have been a source of pleasure instead of pain, and might have added considerably to the youth's stock of ideas, instead of leaving him disgusted with the country and with nature, if he had only proceeded upon right principles. He ought to know that the body, after being long under the influence of a sedentary profession, or of ordinary city life, is not in a state fit for undertaking great fatigue. When soldiers, after being a considerable time in garrison, are about to undertake a long march, they usually are led out to take short walks each day for about a week beforehand, every day's walk lengthening a little, until they become fitted for the serious task. This they call being *beat into a march*. It is a practice founded on right physiological principles, and worthy of being followed by every individual in like circumstances. In the walks of the first two or three days, young pedestrians should not set themselves to any certain number of miles, but only walk as far as they feel their strength will agreeably carry them. Thus they will gradually acquire power, instead of losing it, and in the long-run become good walkers, enjoying the country, moreover, as they go along, and leaving off with an increased love of nature, and a disposition to have another such excursion at the first opportunity.

Young travellers, and old ones too, often make a great mistake with regard to eating. They suppose that, having much fatigue to undergo, they ought to eat a great deal; and the excitement of novelty, and the tempting and unusual food presented at inns, enable them to carry out this idea into practice. In a few days, however, they find themselves unaccountably unwell. This is the consequence of simple over-eating, for in travelling there is no need for more food than usual. Food is also taken at wrong times, and of wrong kinds. It is not uncommon for young pedestrians to walk ten or twelve miles before breakfast, not so much for any economy of time or money, as under the impression that they will have a capital appetite at the end of their walk. As they go along, they delight themselves with reflections as to how they will astonish the waiters, how fresh relays of eggs will be called for, and rolls vanish like morning dreams. Alas! when they have walked their dozen miles, their frames are in a state the most unsuited for the receipt of a full meal; and if they are *able* to eat largely, it will be the worse for them after. The whole aim here is the very reverse of what it ought to be. A very full meal should never be taken on a pedestrian excursion, and that simply for the reason that there is no time to digest a very full meal. A breakfast or dinner during a walking excursion, when only a little time can be allowed for rest afterwards, should be light. Whether light or heavy, the longer the rest afterwards the better—that is, of course, within a reasonable limit. Certainly the rest should not be less than three-quarters of an hour; and if a heavy meal have been taken, half an hour longer will be required at the very least.

Many young travellers have the prudence to fare slightly during their day's walk, but on getting to their inn in the evening, they make all up, as they think, by taking a great composite meal—dinner, tea, and supper rolled into one. If, as often happens, this be taken pretty late, the tea keeps them awake half the night, by virtue of its exciting power. But it may act injuriously in another way. When much of it is taken in proportion to the solids, it prevents digestion. The gastric juice, it must be understood, requires that what is submitted to it should possess a certain solidity. It is for this reason that nature has so arranged, in the case of sucking infants, that the milk curdles immediately after being taken, the gastric juice being thereby enabled to catch hold of it. When a young man, after exhausting his energies by a long walk, fills his stomach with a great *blashy* meal, he commits one of the greatest of imprudences. The gastric juice gets mixed and confounded with the mass, and several hours will elapse before any progress whatever be made in digestion. Many is the sleepless night endured on this account on summer excursions. It is obviously necessary that, if tea is to be taken at all at a late hour, it should be weak, and in quantity strictly proportioned to the solids taken at the same time. Weak coffee, however, ought always to be preferred to tea, if to be taken near bedtime, as its exciting power is much less.

The rules here laid down are all of them grounded on natural principles, which will be found more particularly explained in physiological works—those, for instance, of Dr Combe and Dr Robertson, which are by far the most intelligibly written, at the same time that they are even more philosophical than most others. (See Nos. 8, 45, and 46 of this series, Vol. I.) By attending to such rules, a rural excursion may be made very delightful, and may have the best effects on both body and mind; while neglect of them as certainly must entail pain and disappointment.

Captain Barclay's Feats of Walking.

Captain R. Barclay Allardice of Ury, an enthusiastic cultivator of manly sports, is well known as having some years ago performed various remarkable feats of pedestrianism, and his mode of walking is well worthy of notice. Pierce Egan thus writes of his performances:—'His style of walking is to bend forward the body, and throw its weight on the knees. His step is short, and his feet are raised only a few inches from the ground. Any person trying this plan will find his pace quickened, and he will walk with more ease to himself, and be better able to endure the fatigue of a long journey, than by walking perfectly erect, which throws too much of the weight of the body on the ankle-joints. He always uses thick-soled shoes and lambs'-wool stockings, which preserve the feet from injury.'

We have not space to include an account of the various extraordinary feats performed by this able pedestrian, and shall only notice his famous match with Mr Webster in October 1808. 'The captain engaged himself to go on foot a thousand miles in a thousand successive hours, at the rate of a mile in each and every hour, for a bet of one thousand guineas, to be performed at Newmarket heath, and to start on the following 1st of June. In the intermediate time, the captain was in training by Mr Smith of Owston in Yorkshire. He started on his match at twelve o'clock at night on Thursday, the 1st of June, in good health and high spirits. His dress from the commencement varied with the weather. Sometimes he wore a flannel jacket, sometimes a loose gray coat, with strong shoes, and two pair of coarse stockings, the outer pair boot-stockings without feet, to keep his legs dry. He walked in a sort of lounging gait, without any apparent extraordinary exertion, scarcely raising his feet two inches above the ground. During a great part of the time the weather was very rainy, but he felt no inconvenience from it; indeed, wet weather was favourable to his exertions; as, during dry weather, he found it necessary to have a water-cart to go over the ground to keep it cool, and prevent it becoming too hard. Towards the conclusion of the performance, it was said, the captain suffered much from the spasmodic affection of his legs, so that he could not walk a mile in less than twenty minutes; he, however, ate and drank well, and bets were two to one and five to two on his completing his journey within the time prescribed. About eight days before he finished, the sinews of his right leg became much better, and he continued to pursue his task in high spirits, and consequently bets were ten to one in his favour in London, at Tattersall's, and other sporting circles.

On Wednesday, July the 12th, Captain Barclay completed his arduous undertaking. He had till four P.M. to finish his task, but he performed the last mile by a quarter of an hour after three in perfect ease and great spirit, amidst an immense crowd of spectators. The influx of company had so much increased on Sunday, that it was recommended that the ground should be roped in. To this, however, Captain Barclay objected, saying that he did not like such parade. The crowd, however, became so great on Monday, and he had experienced so much interruption, that he was prevailed upon to allow this precaution to be taken. For the last two days he appeared in higher spirits, and performed his last mile with apparently more ease, and in a shorter time, than he had done for some days past.

With the change of weather he had thrown off his loose greatcoat, which he wore during the rainy period, and walked in a flannel jacket. He also put on shoes thicker than any which he had used in the previous part of his performance. When asked how he meant to act after he had finished his feat, he said he should that night take a good sound sleep, but that he must have himself awaked twice or thrice in the night to avoid the danger of a too sudden transition from almost constant exertion to a state of long repose. One hundred guineas to one, and indeed any odds whatever, were offered on Wednesday morning; but so strong was the confidence in his success, that no bets could be obtained. The multitude who resorted to the scene of action in the course of the concluding days was unprecedented. Not a bed could be procured on Tuesday night at Newmarket, Cambridge, Bury, or any of the towns or villages in the vicinity, and every horse and vehicle was engaged. Among the nobility and gentry who witnessed the conclusion of this extraordinary performance, were the Dukes of Argyle and St Alban's; Earls Grosvenor, Besborough, and Jersey; Lords Foley and Somerville; Sir John Lade, Sir F. Standish, &c. &c. The aggregate of the bets is supposed to have amounted to £100,000. Upon the whole, Captain Barclay must be viewed as a most extraordinary man; his feats exhibiting the extent of vigour that the human frame derives from exercise.'

OUT-OF-DOOR RECREATIONS.

SWIMMING.

The art of swimming is so exceedingly useful, not only as a bracing summer exercise, but as a means of preserving life when accidentally plunged into the water, that it should be acquired by every young person. It may be performed either in the sea or in rivers; but the sea is preferable, as salt water is of a greater specific gravity than fresh, and has the greater power of buoying up the body. Whether in fresh or salt water, however, the body is lighter, bulk for bulk, than the mass of liquid displaced, and consequently will float if a small aid be given by the impulsion of the hands. It is also important to observe, that the more the body is immersed in the water, the more easily is it sustained. Thus if only the face is left above the surface, the buoyancy will be much greater than if the whole head or the head and hands were exposed. When persons unskilled in swimming are plunged into the water, as, for instance, by the upsetting of a boat, they ought, for the reasons now mentioned, not to struggle, splutter, and hold the hands up, but remain tranquil, with as little above water as possible; draw in the breath so as to fill the lungs, and sustain themselves by a paddling motion with the hands.

Practical Directions for Swimming.

The best season for bathing in the sea or rivers is summer and autumn, and the time of day most preferable is the morning before breakfast; the next best time is before dinner. Immediately after dinner, or when the stomach is full, is injurious. A person also should never bathe twice in one day, or continue in the water more than twenty minutes at one time. To avoid the danger of propelling the blood to the head, by stepping suddenly into cold water, always wet the head first. Bathing is best performed when entirely naked; but if this be unsuitable, short drawers may be used.

Young persons or others unskilled in swimming should not on any account go beyond the depth of breast-high, till they are able to buoy themselves up freely. They can commence their lessons in swimming by throwing themselves forward, and trying what will be the effect of a throwing out of hands and feet, keeping only the head above the surface. Some persons tie corks or bladders about their neck or breast; but this we discommend as dangerous. A preferable plan of learning to swim is to receive the aid of a person skilled in the art, who will help to buoy up the learner with his hand, and withdraw his assistance gradually. In ordinary circumstances, however, any young person may acquire the art himself.

The learner having thrown himself forward, he must draw his head back, elevate his chin clear of the surface, project his breast, hollow his back, and be firm and collected. Fear must be entirely thrown aside. Instead of putting down the hands, as if to grope for something, which is a very common error, throw the hands boldly forward, and strike out with them. The plan of doing this is first to bring the hands together, with the fingers close, and the thumbs closed to the forefingers; then strike out with the palms undermost, and slightly hollowed. The hands must not touch the surface in striking, but make a sweep level with the breast, and as far out as possible. Next, they are to be drawn back with a rapid movement; in this retraction the elbows are to be bent, and the hands drooping downwards, so that as little obstacle as possible may be presented to the water. The hands being brought together as before, they are to be struck out in the same manner; and so on.

The hands furnish only half the means of advancing. The other half are the legs, which must be sent out behind with a jerk to their full extent, the soles pushing against the water. The position of the swimmer in the water is indicated in the following cut, fig. 11, in which it will be seen that the body slopes from the

neck to the feet. To advance properly, and secure regular buoyancy, the hands and feet must act alternately, the arms descending while the legs are rising, and the arms rising while the legs are descending.

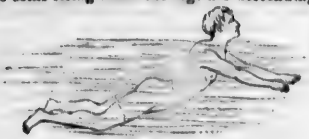


Fig. 11.

Besides regulating the action of the hands and feet, the swimmer must regulate his breathing. The breath is to be inhaled when the body is rising by the descent of the hands, and when the mouth is clearly above the ruffle of the water. This fills the chest with air at the moment most advantageous to do so. The breath is to be expended at the next impulse forward by the legs. Some persons, in learning to swim, acquire the habit of *breasting*, or rising high out of the water at every stroke of their arms; this mode of swimming is not only ungraceful but fatiguing; a good and tasteful swimmer advances smoothly through the water, with a moderate rise, and at a moderate and steady rate of speed.

There are various fanciful modes of swimming; one of these is swimming with the back downwards, as represented in fig. 12. In this case, the head is more immersed than in ordinary swimming, and consequently less labour is required to buoy up the body. The method employed is to lie gently back in the water, with the hands on the thighs, and to strike out the legs as in front swimming. By swimming on the back little progress is made, and it is chiefly useful as a relief to the arms.

Fig. 12.

Another means of relieving the fatigue of swimming, is to float on the back with a very gentle motion of the legs, in the position represented in fig. 13. The arms are extended, the chin and mouth elevated higher than the forehead; and the water is to be agitated as little as possible, so as not to enter the mouth.

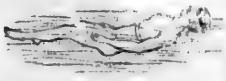


Fig. 13.

Swimming with one arm is sometimes useful. To perform this feat, the head should be held more backward than usual; the swimmer hold himself more erect; the legs and arm must be exercised pretty quickly; and with force the hand should be struck out against the body, and so brought down before, the arm extended its full length for every stroke. The swimmer must, however, be very careful to keep his breast inflated, as this mode of swimming requires more than ordinary dexterity. Should the swimmer draw in his breast imprudently, when his arms are raised, he would immediately sink to the bottom.

Diving is the art of descending rapidly in the water, and requires to be done with address. The best method consists in drawing in the breath, placing the two hands together as a cut-water in front, and then to plunge head foremost, causing the forehead to receive the force of the fall. In taking the water, the eyes, for safety, should be shut; but they may be opened when beneath the surface, when the body assumes the swimming attitude. Swimming below the water is so exceedingly easy that it requires no directions.

Mr Frost, in his small work on 'Scientific Swimming,' presents the following practical rules for sportive swimming:—'To spin with ease, the person should be somewhat buoyant; the breast must be well inflated, and the attitude may be that of sitting with the feet crossed. It is effected by embracing the water with each hand, alternately, on the same side. In order to turn to the right, the water must be embraced with each hand, alternately, on the right side; and to turn to the left, on the left side. This action causes a circular or spinning movement, which increases in velocity as it is continued. Of all the playful ways of swimming he ever knew, the author considers this to be the most curious. He has seen boys sportively rolling along the stream, and conceived it very much to resemble the juvenile amusement, on a summer day, of rolling down a declivity. The stream is the most favourable situation for rolling, as it very much assists the turn. To achieve this, the person must lay himself straight across the current; he must inflate his breast, and hold his head very far backward; his legs may either lie together or be crossed; he must exercise his hands in the same manner as in spinning. By this alternate action of the hands, with the assistance of the stream, some persons will roll along in a pleasing and extraordinary manner.' He then mentions quadruped swimming; but neither the posture nor action is agreeable.

In some cases cramp takes place in the water, and the swimmer requires to be prepared for its attacks. The following directions by Walker, acted upon with due self-possession, comprise all that need be said in this place on this subject:—

'As to cramp, those chiefly are liable to it who plunge into the water when they are heated, who remain in it till they are benumbed with cold, or who exhaust themselves with violent exercise. Persons subject to this affection must be careful with regard to the selection of the place where they bathe, if they are not sufficiently skilful in swimming to vary their attitudes, and dispense instantly with the use of the limb attacked by cramp. Even when this does occur, the skilful swimmer knows how to reach the shore by the aid of the limbs which are unaffected, while the uninstructed one is liable to be drowned.

If attacked in this way in the leg, the swimmer must strike out the limb with all his strength, thrusting the heel downward, and drawing the toes upward, notwithstanding the momentary pain it may occasion; or he may immediately turn flat on his back, and jerk out the affected limb in the air, taking care not to elevate it so high as greatly to disturb the balance of the body. If this does not succeed, he must paddle ashore with his hands, or keep himself afloat by their aid, until assistance reach him. Should he even be unable to float on his back, he must put himself in the upright position, and keep his head above the surface by merely striking the water downward with his hands at the hips, without any assistance from the legs.'

SKATING.

This is a highly-exhilarating and healthful out-of-door pastime in winter, when rivers and ponds are frozen, and offer a clear surface of ice. The art of skating consists in poising the body on a sharp ridge of iron beneath the sole of the foot, and advancing on the ice in that position, one foot relieving another. As a very slender base will support any mass of matter kept in motion, skating is by no means a difficult art, and requires only courage, quickness of eye, and delicacy of taste, to render the performances elegant.

A skate is a well-known apparatus of wood and iron, with straps and buckles to attach it to the foot. The skate for each foot must be alike. The iron should not be deeper than three-quarters of an inch, and smooth or flat along its under edge; only boys' skates should be grooved, to take better hold of the ice. The iron should be a quarter of an inch thick. The edges should be smooth, free from rust, and sharply ground.

Practical Directions for Skating.

We beg to offer the following directions to the young skater, chiefly from the work of Mr Walker:—

'Either very rough or very smooth ice should be avoided. The person who for the first time attempts

to skate must not trust to a stick. He may make a friend's hand his support, if he require one; but that should be soon relinquished, in order to balance himself. He will probably scramble about for half an hour or so, till he begins to find out where the edge of his skate is. The beginner must be fearless, but not violent, nor even in a hurry. He should not let his feet get far apart, and keep his heels still nearer together. He must keep the ankle of the foot on the ice quite firm; not attempting to gain the edge of the skate by bending it, because the right mode of getting to either edge is by the inclination of the whole body in the direction required; and this inclination should be made fearlessly and decisively.

The leg which is on the ice should be kept perfectly straight; for though the knee must be somewhat bent at the time of striking, it must be straightened as quickly as possible, without any jerk. The leg which is off the ice should also be kept straight, though not stiff, having an easy but slight play, the [illegible] pointing downwards, and the heel within fro[illegible] twelve inches of the other.

The learner must not look do[illegible] at his feet, to see how they perform. [illegible] cline his body a little forward, for saf[illegible] his head up, and see where he goes; his p[illegible] and his face rather elevated than otherwise.

When once off, he must bring both feet up together, and strike again, as soon as he finds himself steady enough, rarely allowing both feet to be on the ice together. The position of the arms should be easy and varied, one being always more raised than the other; this elevation being alternate, and the change corresponding with that of the legs; that is, the right arm being raised as the right leg is put down, and *vice versâ*, so that the arm and leg of the same side may not be raised together.

The face must be always turned in the direction of the line intended to be described. Hence, in backward skating, the head will be inclined much over the shoulder; in forward skating, but slightly. All sudden and violent action must be avoided. Stopping may be caused by slightly bending the knees, drawing the feet together, inclining the body forward, and pressing on the heels. It may also be caused by turning short to the right or left, the foot on the side to which we turn being rather more advanced, and supporting part of the weight.

The first attempt of the beginner is to walk, and this walk shortly becomes a sliding gait, done entirely on the inside edge of the skate.

The first impulse is to be gained by pressing the inside edge of one skate against the ice, and advancing with the opposite foot. To effect this, the beginner must bring the feet nearly together, turn the left somewhat out, place the right a little in advance, and at right angles with it, lean forward with the right shoulder, and at the same time move the right foot onwards, and press sharply, or strike the ice with the inside edge of the left skate—care being taken instantly to throw the weight on the right foot. While thus in motion, the skater must bring up the left foot nearly to a level with the other, and may for the present proceed a short way on both feet.

He must next place the left foot in advance in its turn, bring the left shoulder forward, inclining to that side, strike from the inside edge of the right skate, and proceed as before.

Finally, this motion has only to be repeated on each foot alternately, gradually keeping the foot from which he struck longer off the ice, till he has gained sufficient com nand of himself to keep it off altogether, and is able to strike directly from one to the other, without at any time having them both on the ice together. This must be practised till he has gained some degree of firmness and power, and a command of his balance.'

Thus accomplished in the rudiments of the art, the skater may proceed to learn the *forward roll*, which is the first step to figure-skating. 'The impulse is gained in the same manner as for the ordinary run; but to get on the outside edge of the right foot, the moment that foot is in motion, the skater must advance the left shoulder, throw the right arm back, look over the right shoulder, and incline the whole person boldly and decisively on that side, keeping the left foot suspended behind. As he proceeds, he must bring the left foot past the inside of the right with a slight jerk, which produces an opposing balance of the body; the right foot must quickly press, first on the outside of the heel, then on the inside, or its toe; the left foot must be placed down in front before it is removed more than about eight or ten inches from the other foot; and by striking outside to the left, giving at the same moment a strong push with the inside of the right toe, the skater passes from right to left, inclining to the left side in the same manner as he did to the right. He then continues to change from left to right, and f[illegible] right to left, in the same manner. At first he [illegible] not remain long upon one leg, nor scruple occa[illegible] to put the other down to assist; and thro[illegible] must keep himself erect, leaning most on the heel.'

Having attained this proficiency, there will be little difficulty in describing any figure, formed by a combination of circles or semicircles. The figure 8 is a favourite among clever skaters, and also the figure 5, both forward and reversed.

Skating on ice of doubtful strength is accompanied with great danger, as in an instant the skater may find himself sunk to the neck in water, and be drowned before assistance can be rendered. Much of this danger may be obviated by wearing a *safety-cape*, which is a loose cape, of some waterproof fabric, inflated with air. We recommend every skater to use by all means a cape of this kind while pursuing his amusement on the ice.

CURLING.

Curling is a game of great antiquity and popularity in the southern and western parts of Scotland. It is a winter game, played on the ice; and where the rivers and ponds are frozen, usually supersedes all other out-of-door amusements. As the ice requires to be much thicker than for skating, it is usual to form ponds so shallow that the whole water in them becomes a frozen mass capable of bearing up any weight.

The game is played by a party forming rival sides, each individual being possessed of a circular hard stone, of about nine inches in diameter, flat and smooth on the under side, and on the upper, having a handle fixed to the stone. Each player is likewise armed with a broom to sweep the ice, in order to accelerate the progress of the stones; and his feet are ordinarily furnished with trampets or crampets, which help to steady him in taking his aim. A large, long, open space of ice, of from thirty to forty yards in length, and eight or nine feet across, called a *rink*, being cleared, and a mark or *tee* being made at each end to play to, the contest takes place by each person hurling or causing his stone to slide towards the opposite end of the rink. A certain number being the game, the object of each side is, which will have the greatest number of stones nearest the tee; and all play from end to end alternately till this is ascertained. To hurl these stones with precision, in this species of sport, is exceedingly difficult; much depending on the keenness of the frost, the tone of the ice, and the truth of the stone. Sometimes the best and oldest players are baffled by beginners, simply by their curling-stones having taken a bias to one side or another; and frequently, after the best players have placed their stones in a cluster round the tee, one rapid shot from an antagonist will disperse the whole in all directions round. Occasionally it also happens that, in hurling, the stones come far short of the mark; but if they do not get beyond a line called the *hogg score*, they are dragged aside, and are not counted. A more than usually extensive match is called a *bonspiel*.

Such is a meagre outline of the game of curling, which, all over the lowlands of Scotland during the

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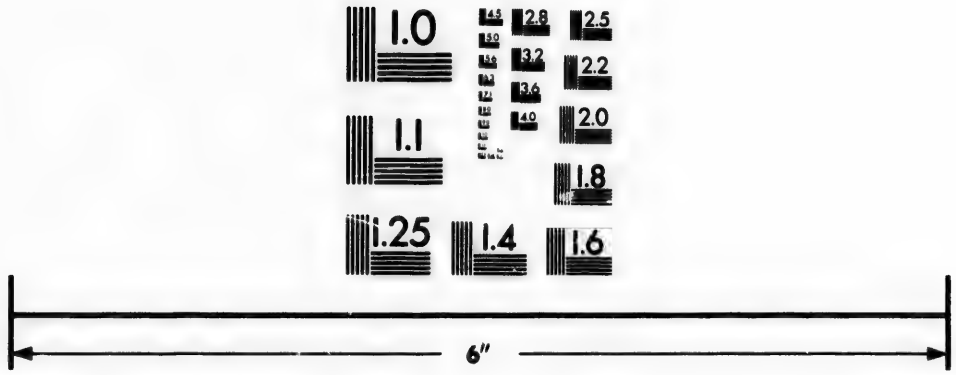

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keen frosty days of winter, engages all classes of persons in its exciting sport. Parish contends against parish, county against county, club against club, in universal mirthful rivalry. At Edinburgh, where there are neither

rivers nor ponds, the inhabitants usually resort for the amusement of curling, as well as skating, to the adjacent beautiful small lake at Duddingston, lying at the south-eastern base of Arthur Seat. Here a most animated scene is exhibited during the period that the waters of the lake are frozen. Numbers of rinks are cleared, at which may be seen playing together persons in almost every shade of society—professors of the university, clergymen, private gentlemen, merchants, tradesmen, and artisans—all meeting on a common level, and engaged in the same spirit-stirring pursuit; for in curling there is no aristocracy of feeling, and so, for the time, a universal saturnalia prevails. The game of curling is eulogised by more than one Scottish poet, particularly by Grahame, who thus commences a description of the sport:—

'Now rival parishes and shrievedoms keep,
On upland lochs, the long-expected tryst,
To play their yearly bonspiel. Aged men,
Smit with the eagerness of youth, are there,
While love of conquests lights their beamless eyes,
New-nerves their arms, and makes them young once more.'

In Mr J. M'Diarmid's 'Sketches of Nature,' we find the following spirited account of this delightful and invigorating winter game:—

'The time is not distant when the game of curling was little known out of Scotland, or even within it, benorth the Forth. But the taste for this manly sport has increased greatly of late years; and in various parts of England, as well as of America, the broom and the channel-stone are put in requisition with the same regularity that winter comes round.

In the whole range of rural sports, I know nothing more exhilarating than a *spiel* on the ice, where the players are numerous and well-matched—the stakes a dinner of beef and greens—and the forfeit the honour of rival parishes. All around is blank and dreary—the snow-flake freezes as fast as it falls—the sun seems level with the horizon's verge—the hills make the spectator cold to look at them—and everything, in one word, conspires to complete the picture of a winter's day. But the courage of men bent on the favourite amusement of curling is not easily damped by the inclemency of the elements; on the contrary, their spirits seem to mount as the thermometer falls, and nothing pleases them more than a feeding storm, and, along with that, the prospect of a long lease of "their roaring play." Arrived at the scene of action, all is bustle and animation, till the stones have been distributed, assorted, claimed—rinks measured, tramps fastened, tees fixed, and the order of battle completely arranged; and as these preliminaries are speedily settled, to it the parties set with all the anxiety of those who contend for a much higher prize. Lots, perhaps, are cast for the first shot, and the greatest novice invited to deliver the first stone; and should his arm lack the proper pith, that instant a dozen brooms are raised to help the laggard over the *hogg score*. A second, a third, a fourth succeeds, and so on, till the line stretches a tolerable length; and each man is warned by his respective friends to plant, if possible, an excellent guard—dislodge this stone, and cover that—open up one port, and close another—play soft or strong, outside or inside, as the occasion may require—and steer as closely by the signal broom as the mariner, when warned by similar devices, threads his watery way through sandbanks and shallows.

As the animating sport deepens, it is amusing to contrast the bustle that obtains in one little spot with the stillness that broods over the external world. While the hills above are silent and dark, the shining lake below is instinct with life, and resounds with sounds of mirth and glee, which, borne along on the elastic air, invade the solemn loneliness that reigns around, till echo itself takes up the tale, and repeats in broken fragments the curler's vocabulary. At length, as the more veteran players advance to decide by their skill the fate of the *side*, the interest becomes intense, and gives rise to so many calculations of what is to be done, and what avoided, such bustling to and fro, as must appear a perfect mystery to the uninitiated. The last wary shot booms athwart the ice as if impelled by magic, and while every port, to an onlooker, seems closed, finds its way, under the guidance of a powerful arm and steady eye, through passages rivalling the intricacy of the walls of Troy. Then follow the shout of victory and the murmur of defeat, till the contest is renewed under the mingled emotions of hope and fear—the vanquished trusting that the tables will be turned, and the conquerors confident they will remain the same. Speedily the eager players are marshalled, and the broom put in requisition as before; again the stones boom away and away, meandering here, meeting there, and whirling from the collision like the urchin's top at school; again shot succeeds shot, and game follows game, until the conclusion of the *bonspiel*, or the approach of evening, proclaims that it is time the sport should surcease, and the combatants wend their way to the nearest *clachan*, to enjoy their favourite feast of beef and greens. And now the scene changes entirely, though, as the savoury viands load the board, all feel the effects of the keen mountain air, and make so good a use of their time while the opportunity serves, that the business of eating becomes nearly as noisy as the business of play; rounds of corn-beef, flagons of home-brewed, disappear with a rapidity that is truly astonishing, and of which no adequate conception can be formed by persons whose appetites were never whetted by a day on the ice.'

Laws and Regulations for Curling.

In the year 1838 was instituted the Grand Caledonian Curling Club, for the purpose of uniting all curlers into a 'brotherhood of the rink,' and of regulating the game by general laws, which have now been adopted by all local curling associations. From the Annual published by the club we extract the following as the rules of the game:—

'1. The length of the rink shall be forty-two yards; any deviation occasioned by peculiar circumstances to be by mutual agreement of parties. When a game is begun, the rink is not to be lengthened nor shortened, unless by consent of the majority of players.

[It is advisable that rinks have double tees at each end, the one at least two yards behind the other, the whole four to be as nearly as possible in the same line. The stones are to be delivered from the outer tee, and played towards the inner; this saves the ice from being injured around the tee played up to.]

2. The rink shall be changed in all cases when, from the springing of water, the majority of players cannot make up. Neither the winning nor losing party have right to object, as all contests must be decided on the fair and equitable principle of science, not of strength.

3. The number of shots in a game, if not otherwise mutually fixed upon, shall be twenty-one.

[A game more frequently consists of thirteen shots, or even of seven, than of any others, when an hour or two's practice only is intended; but this is a matter of private arrangement.

In a bonspiel or match, when a considerable number of players appears on each side, the aggregate number of shots gained in a fixed time is not only as equitable a method, but affords amuse-

ment to all the rink to the conclusion, and ought to be universally adopted.]

4. The hogs' score to be one-sixth part of the length of the rink from the tee. Every stone to be considered a hog which does not clear a square placed upon the score.

5. Every rink to be composed of four players a side, each with two stones, unless otherwise mutually agreed upon. In no case shall the same individual or party play two stones in succession, and every player shall deliver both his stones alternately with an opponent, before any other of the same side or party play one.

6. Parties to draw cuts which shall fill the ice at the first end; after which the winning party at the last end or game of that day's play shall do so. No stone to be counted which does not lie within seven feet from the tee, unless it be previously otherwise mutually agreed upon. In cases where each party has a stone equally near the tee, neither to be counted, and the winning party of the previous end is again to fill the ice. Measurements to be taken from the centre of the tee to that part of the stone which is nearest it.

7. Each player to place his feet in such a manner as that, in delivering his stone, he shall bring it over the tee. A player stepping aside to take a brittle (or wick), or other shot, shall forfeit his stone for that end. A player, after delivering his last stone, shall not remain longer than to see his next opponent fit his tee, but shall take his place at the other end between the score and the previous player of his own party; and shall on no account remain to give directions to the next of his party who plays.

8. If any player shall improperly speak to or interrupt another while in the act of delivering his stone, one shot shall be added to the score of the party so interrupted.

9. The rotation of play adopted at the beginning must be observed through the whole game.

10. All curling stones shall be of a circular shape. No stone must be changed throughout the game, unless it happen to be broken, and then the largest fragment to count, without any necessity of playing with it more. If a stone rolls and stops upon its side or top, it shall not be counted, but put off the ice. Should the handle quit the stone in the delivery, the player must keep hold of it, otherwise he will not be entitled to replay the shot.

11. If a player plays out of turn, the stone so played may be stopped in its progress, and returned to the player. If the mistake shall not be discovered till the stone is again at rest, the opposite party shall have the option to add one to their score, and the game proceed in its original rotation, or, to declare the end null and void.

12. In double-soled stones, the side commenced with shall not, under forfeit of the match, be changed during the progress of the game.

[Double-soled stones are those in which the handle can be shifted from one side to another; one side being slightly concave for keen ice, and the other convex for dull ice.]

13. The sweeping department to be under the exclusive control of the skipper. No sweeping to be allowed by any party till the stone has passed the hogs' score, except when snow is falling or drifting, in which case it shall be admissible to sweep from tee to tee. The player's party may sweep when the stone has passed the further hogs' score, his adversaries' when it has passed the tee. Sweeping to be always to one side. Previous to each direction being given, either party is entitled to sweep the rink clean.

14. Parties, before beginning to play, to take different sides of the rink, which they are to keep throughout the game; and no player, on any pretence, to cross or go upon the middle of the rink. The skippers alone to stand about the tee. Their respective parties, according to their rotation of play, shall take their position down to the hogs' score.

15. If in sweeping, or otherwise, a running stone be marred by any of the party to which it belongs, it shall be put off the ice. If by any of the adverse party, it shall be placed where the skipper of the party to whom it belongs shall direct. If marred by any other means, the player shall take his shot again. Should a stone at rest be accidentally displaced at any part of the end before the case provided for in rule 13 comes into operation, it shall be put as nearly as possible in its former position.

16. Every player to come provided with a besom, to be ready to play when his turn comes, and not to take more than a reasonable time to throw his stones. Should he accidentally play a wrong stone, any of the players may stop it while running; but if not stopped till it is again at rest, it shall be replaced by the one which he ought to have played.

17. No measuring of shots allowable previous to the termination of the end. Disputed shots to be determined by the skippers; or, if they disagree, by some neutral person mutually chosen by them, whose decision shall be final.

18. Should any played stone be displaced before the last stone is thrown and at rest, by any of the party who are lying the shot, they shall forfeit the end; if by any of the losing party who have the stone yet to play, they shall be prevented from playing that stone, and have one point deducted from their score. The number of shots to be marked by the winners to be decided by the majority of the players, the offender not having a vote.

19. The skippers shall have the exclusive regulation and direction of the game, and may play in what part of it they please; but having chosen their place at the beginning, they must retain it till the end of the game. The players may give their advice, but cannot control their director; nor are they upon any pretext to address themselves to the person about to play. Each skipper, when his own play comes, shall name one of his party to take charge for him. Every player to follow implicitly the direction given him.

20. Should any question arise, the determination of which is not provided for by the words and spirit of the rules now established, it may be referred to the three nearest members of the representative committee, unconnected with the disputing parties, who shall form a district committee of reference, and whose decision shall be binding on all concerned till the annual general meeting of the representative committee, to whom either party may appeal the case.'

CRICKET.

This is perhaps the best of all out-of-door sports for youth. It requires quickness of mind and eye, great agility of limb, and, properly conducted, is highly exhilarating and amusing. The game is played on an open well-shaven green, which is level, and free from stones or shrubs; it should also be dry, and of sufficient dimensions to allow of a good blow to the ball and run—a square field of three or four acres is a good size. The apparatus required in the game consists of balls, bats, and wickets. The dress of the players should be light and easy—a white woollen jacket, cap, linen trousers, and shoes provided in the soles with points to prevent slipping in running: in London there are shoes made purposely for cricketing.

Cricket is played in two distinct forms; one is called *Single Wicket*, and the other *Double Wicket*. We shall first give an outline of Single Wicket.

Single Wicket.—This game is played by any number of persons, but generally *five* are on each party or side. Three straight rods or *stumps*, twenty-seven inches high, are stuck in a row in the ground; on the top of the stumps are laid two pieces of wood called the *bail*, and so placed that they will readily fall off if the stumps be hit by the ball. This apparatus is called the *wicket*. At the distance of four feet four inches in front of the wicket is a mark on the ground called the *popping-crease*. In a straight line with the wicket is a mark on the ground called the *bowling-crease*, which is parallel to the bowling-crease.

An individual taken from one party is appointed *bowler*; his duty is to bowl his ball towards the opposite wicket, which he does by a short run. An individual from the antagonist party is appointed *batter*; his duty is to stand with his bat placed with its tip on the ground at the popping-crease, and to oppose the progress of the ball, or to prevent it from knocking down his wicket. He must also endeavour to strike the ball smartly, so as to send it to a distance on the field. The field is in charge of the party to which the bowler belongs; these are termed *field-men*, or *field-keepers*, and each has an appointed place, from which he takes a peculiar designation: one is named the *leg-hit*, or *long stop*, another the *off-hit*, a third the *long field on*, a fourth the *long field off*. Their duties are to catch the ball when either struck or missed by the batter.

If the ball be missed by the batter, he remains at his wicket, and the ball is returned by the long stop to the bowler. If the ball be struck, and to such a distance

that the batter thinks he could run to the bowling-crease, touching it with his bat, and return to his popping-crease, touching it also before the ball is returned and strikes the wicket, he does so; and if he perform this feat successfully, it is called *one run*, and counts one towards the game. Sometimes he strikes the ball to such a great distance that he can run to and fro twice, and this counts two; if three times, it counts three; and so on. These are termed *runs* or *notches*.

Should the bowler knock down the wicket, the batter retires, and this finishes his *inning*. His inning is also finished by the wicket being knocked down with the ball by any of the field-keepers, if he be off his ground. The inning may likewise be finished (as it frequently is) if the batter strikes the ball into the air, and it be caught by any of the batter's antagonists before it reaches the ground, and retained long enough to be thrown up again.

Double Wicket, which is considered the true game of cricket, is like two games of single wicket playing at one time, there being two wickets from which to bowl; also two batters, but only one ball. This game is played as above, with this difference, that the batter runs only to the opposite end, exchanging places with the other batter, who is of the same party. The number of persons engaged is properly eleven on each side. As in single wicket, the game is determined by the number of runs made in two innings by each player; the party gaining the greater number of runs being victor.

Such is an outline of the two kinds of the game; but there are many minute differences in playing in different parts of England, which it would be tedious to describe. It has been conceded by general consent to follow, in case of dispute, the laws and regulations of the 'Mary-le-bone Cricket Club,' an association in London which has taken a leading part in this truly English sport. The following are the laws and regulations of this club:—

Laws and Regulations of Single Wicket.

'1. When there shall be fewer than five players on a side, bounds shall be placed, at twenty-two yards each, in a line from the off and leg-stump.

2. The ball must be hit before the bounds to entitle the striker to a run; which run cannot be obtained unless he touch the bowling-stump or crease in a line with it with his bat or some part of his person, or go beyond them; returning to the popping-crease, as at double wicket, according to the twenty-second law.

3. When the striker shall hit the ball, one of his feet must be on the ground, and behind the popping-crease, otherwise the umpire shall call "No hit."

4. When there shall be less than five players on a side, neither byes nor overthrows shall be allowed; nor shall the striker be caught out behind wicket, nor stumped out.

5. The fieldsmen must return the ball, so that it shall cross the play between the wicket and the bowling-stump, or between the bowling-stump and the bounds. The striker may run till the ball be so returned.

6. After the striker has made one run, he must touch the bowling-stump and turn, before the ball shall cross the play, to entitle him to another.

7. The striker shall be entitled to three runs for lost ball, and the same number for ball stopped with hat, with reference to the twenty-ninth and thirty-fourth law of double wicket.

8. When there shall be more than four players on a side, there shall be no bounds. All hits, byes, and overthrows will then be allowed.

9. The bowler is subject to the same laws as at double wicket.

10. Not more than one minute shall be allowed between each ball.

Laws and Regulations of Double Wicket.

1. The ball must not weigh less than five ounces and a-half, nor more than five ounces and three-quarters. It must not measure less than nine inches, nor more than nine inches and one-eighth, in circumference. At the beginning of each innings, either party may call for a new ball. (But in matches, the same ball must go through the game.)

2. The bat must not exceed four inches and one-quarter in the widest part; it must not be more than thirty-eight inches in length.

3. The stumps, three to each wicket, must be twenty-seven inches out of the ground, the balls eight in length; the stumps of sufficient thickness to prevent the ball from passing through.

4. The bowling-crease must be in a line with the stumps, six feet eight inches in length; the stumps in the centre, with a return crease at each end towards the bowler, at right angles.

5. The popping-crease must be four feet four inches from the wicket, and parallel to it; unlimited in length, but not shorter than the bowling-crease.

6. The wickets must be pitched opposite to each other by the umpires, at a distance of twenty-two yards.

7. It shall not be lawful for either party during a match, without the consent of the other, to alter the ground by rolling, watering, covering, mowing, or beating. This rule is not meant to prevent the striker from beating the ground with his bat near to the spot where he stands during the innings, nor to prevent the bowler from filling up holes with saw-dust, &c. when the ground shall be wet.

8. After rain, the wickets may be changed, with the consent of both parties.

9. The bowler shall deliver the ball with one foot behind the bowling-crease, and shall bowl four balls before he change wickets, which he shall be permitted to do once only in the same innings.

10. The ball must be bowled. If it be thrown or jerked, or if the hand be above the shoulder in the delivery, the umpire must call "No ball." (This is not reckoned as one of the four balls.)

11. The bowler may require the striker at the wicket from which he is bowling to stand on that side of it which he may direct.

12. If the bowler toss the ball over the striker's head, or bowl it so wide that it shall be out of distance to be played at, the umpire (even though he attempt to hit) shall adjudge one run to the parties receiving the innings, either with or without an appeal from them, which shall be put down to the score of wide balls, and such ball shall not be reckoned as any of the four balls. When the umpire shall have called "Wide ball," one run only shall be reckoned, and the ball shall be considered dead.

13. If the bowler shall deliver a "No ball," the striker may play at it, and be allowed as many runs as he can get; and he shall not be put out except by running out. In the event of no run being obtained by any other means, then one run shall be scored.

14. In the event of a change of bowling, no more than two balls shall be allowed for the sake of practice.

15. If the bowler bowl one ball, he shall be obliged to bowl four.

16. The striker is out if either of the balls be bowled off, or if a stump be bowled out of the ground.

17. Or if the ball, from a stroke of the bat or hand below the wrist, be held before it touch the ground, although it be hugged to the body of the catcher.

18. Or if in striking, or at any other time while the ball is in play, both his feet be over the popping-crease, and his wicket put down, except his bat be grounded within it.

19. Or if in striking at the ball he hit down his wicket.

20. Or if, under pretence of running or otherwise, either of the strikers prevent a ball from being caught, the striker of the ball is out.

21. Or if the ball be struck, and he wilfully strike it again.

22. Or if, in running, the wicket be struck down by a throw or by the hand or arm (with ball in hand) before his bat (in hand) or some part of his person be grounded over his popping-crease. But if the balls be off, a stump must be struck out of the ground.

23. Or if any part of the striker's dress knocks the wicket when striking.

24. Or if the striker touch or take up the balls in play, unless at the request of the opposite party.

25. Or if with any part of his person he stop the ball, which in the opinion of the umpire at the bowler's wicket shall have been delivered in a straight line to the striker's wicket, and would have hit it.

26. If the players have crossed each other, he that runs for the wicket which is put down is out.

27. A ball being caught, no run shall be reckoned.

28. If a "Lost ball" be called, the striker shall be allowed six runs; but if more than six shall have been run before "Lost ball" shall have been called, then the striker shall have all which shall have been run.

29. After the balls shall have been lodged and definitively settled in the wicket-keeper's or bowler's hand, it shall be considered dead. If, when the bowler is about to deliver the ball, the striker at his wicket shall go outside his popping-crease before such actual delivery, the said bowler may put him out.

30. If the striker be hurt, he may retire from his wicket, and return to it at any time during that innings.

31. If a striker be hurt, some other person may stand out for him, but not go in.

32. No substitute in the field shall be allowed to bowl, keep wicket, stand at point, cover the point, or stop behind in any case.

33. If any fieldsman stop the ball with his hat, the ball shall be considered dead, and the opposite party shall add five runs to their score. If any be run, they shall have five in all.

34. The ball having been hit, the striker may guard his wicket with his bat, or with any part of his body, except his hand; but the twenty-fourth law, by which he is forbidden to touch or take up the ball, may not be disobeyed.

35. The wicket-keeper shall not take the ball for the purpose of stumping until it has passed the wicket. He shall stand at a reasonable distance behind the wicket, and shall not move till the ball be out of the bowler's hand; he shall not by any noise incommode the striker; and if any part of his person be over or

before the wicket, although the ball hit it, the striker shall not be out.

36. The umpires shall not stand more than six yards from the wicket; they are sole judges of fair and unfair play, and all disputes shall be determined by them, each at his own wicket; but in case of a catch which the umpire at the wicket bowled from cannot see sufficiently to decide upon, he may apply to the other umpire, whose opinion shall be conclusive.

37. The umpires in all matches shall pitch fair wickets, and the parties shall toss up for the choice of innings.

38. They shall allow two minutes for the striker to come in, and fifteen minutes between each innings. When the umpire shall call "Play," the party refusing to play shall lose the match.

39. They are not to order a striker-out, unless appealed to by the adversaries.

40. But if one of the bowler's feet be not entirely behind the bowling-crease, within the return-crease, when he shall deliver the ball, the umpire at his wicket, unasked, must call "No ball."

41. If, in running, either of the strikers shall fail to ground his bat (in hand) or some part of his person over the popping-crease, the umpire for every such failure shall deduct two runs from the number intended to have been run; because such striker not having run home in the first instance, cannot have started in the second from the proper goal.

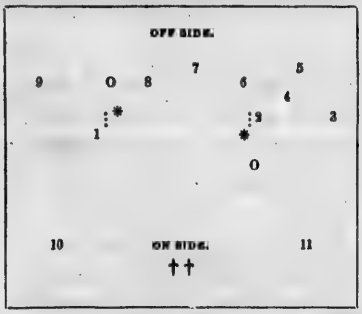
42. No umpire shall be allowed to bet.

43. No umpire is to be changed during a match, unless with the consent of both parties, except in case of a violation of the forty-second law; then either party may dismiss the transgressor.

44. After the delivery of four balls, the umpire shall call "Over," but not until the ball shall be lodged and definitively settled in the wicket-keeper's or bowler's hand; the ball shall then be considered dead. Nevertheless, if an idea be entertained that either of the strikers is out, a question must be put previously to, but not after, the delivery of the next ball.

45. The umpire must take especial care to call "No ball" instantly upon delivery; "Wide ball" as soon as ever it shall pass the striker.'

To these laws and regulations it may be of use to add the following diagram, representing the field during a cricket match, with the proper position of the parties playing, also the technical names of these parties:—



Names of parties indicated by the figures:—* *, Strikers; 1, Bowler; 2, Wicket-keeper; 3, Long Stop; 4, Short Slip; 5, Long Slip; 6, Point; 7, Cover; 8, Middle Wicket; 9, Long Field, off side; 10, Long Field, on side; 11, Leg; O O, Umpires; † †, Scorers. This is the usual placing of the field-men, but bowlers make such alterations as they deem best to oppose the strikers.

BOWLS.

Games with bowls are of great antiquity, and have existed in many different forms. That which has ultimately become the proper English game of bowling is performed with balls of fine hard wood on a smooth shaven lawn called a *bowling-green*. There are two parties, and each individual possesses a bowl. One of each party plays alternately. The object is to deliver the ball from the hand along the surface of the green, and in such a manner as to place it close by an appointed mark. The party which first gains the specified number of points, by being nearest the goal, is victor. The goal or object played to is a small ball called the *jack*. It is not fixed upon any particular spot, but is bowled by one of the party to a certain distance.

A bowling-green requires to be remarkably level, and kept closely shaved by the scythe. The length of space played in, called sometimes a *rink*, may be about thirty yards. The balls are not altogether spherical; they are spheroids, or flattish on two opposite sides. They are usually made of *lignum vitæ*, and are sometimes handsomely mounted with silver plates on the sides, bearing the names or arms of the owners. The size varies from about four to six inches in diameter.

A knowledge of the value of forces, which can be gained only by experience, is necessary in bowling; but a not less important requisite is a knowledge of the art of giving a bias to the bowl. A person skilled in this art will, by a peculiar pressure of the fingers in delivering his ball, cause it to roll in a kind of semicircle, so as to go with a sweep round the cluster of balls in front of the jack, and come to its place of rest close by the jack or goal.

The game is healthful and exhilarating, and played in moderation, seems well adapted for the recreation of sedentary persons. In many towns in England and Scotland there are beautiful bowling-greens, the property of the citizens at large, or maintained by private clubs. In Glasgow there are several bowling clubs, and the following are a few of the regulations laid down for the game by a most respectable association in that city—namely, the 'Wellcroft Bowling Club:'—

Regulations for Bowls.

'The game to consist of nine points, unless otherwise agreed; and the throwing of the jack and playing first to be decided by lot.

If the jack is thrown into the ditch on any occasion after the first throw, the opposite party have the privilege of throwing it anew, and not afterwards moved if three feet clear of the ditch in front of the players. This rule not to apply to the side ditch, from which the jack must be sufficiently distant to allow both fore and back-hand play.

All players, when throwing their bowl, to have one foot on the aftermost white ball marked on the cloth; the position of the cloth not to be changed during an end; and if by accident removed from its situation, to be placed as near as possible to the same spot.

A bowl touching the jack at any time during its course on the green, is what is called a "toucher," and counts the same as any other bowl, though in the ditch.

If the jack, or bowl, after touching the jack, is run into the ditch, the place where either rests may be marked, the jack placed at the edge of the ditch, and both replaced when the end is played out.

If the jack is *burned*, or displaced otherwise than by the effect of the play, the opposite party to have the option of playing out the end, or beginning it anew.

When a bowl is burned, if belonging to the party guilty, it is to be put off the green; if belonging to the opposite party, to be replaced as near its original position as possible by the party to whom it belongs. If the jack is burned by a non-player, the end to be played over again.

If a bowl is accidentally marred by an opponent, it shall be in the option of the party playing to let it rest, or play it over again; if it is marred willingly by an opponent, it may be placed anywhere, at the pleasure of the player. If a bowl is marred in either case by the player's party, the opponents to have the same privilege.

If a bowl (without touching the jack) rebounds from the ditch, it shall be put off the green; and if it has disturbed either jack or bowls, they shall be replaced as near as possible by the opponent's party.

After an end is played, neither jack nor bowls to be touched until the game is counted and all parties satisfied. And no measuring till the end is played.

No player to change his bowls during the game; the party doing so loses the game.'

GOLF.

The game of golf is believed to be peculiar to Scotland, though most likely derived from Germany; the term *golf* being from the German word *kolbe*, or the Dutch *kolf*, a club. The popular pronunciation of the Scotch word is *goff*, or *gowf*. Strutt, in his 'Sports and Pastimes of the People of England,' observes that 'there are many games played with the ball, that require the assistance of a club or bat, and probably the most ancient among them is the pastime now distinguished by the name of goff. In the northern part of the kingdom goff is much practised. It answers to a rustic pastime of the Romans, which they played with a ball of leather stuffed with feathers, and the goff-ball is composed of the same materials to this day. During the reign of Edward III., the Latin name *cambuca* was applied to this pastime, and it derived the denomi-

nation, no doubt, from the crooked club or bat with which it was played.'

It seems to be quite uncertain at what period the game of golf was introduced into Scotland; but it may be fairly presumed that this amusement, as well as football and archery, were practised to a considerable extent in the reign of our King James I.

King Charles I. was much attached to the amusement of golfing, and on his visit to Scotland in 1641, was engaged in it on Leith Links when intimation was given him of the rebellion in Ireland; whereupon he threw down his club, and returned in great agitation to Holyrood House. The Duke of York, afterwards James II., also delighted in the game.

Golf is played upon a large piece of open ground, covered with short herbage, but not necessarily level. It is considered that skill is best shown by playing over a surface on which there are certain irregularities or *hazards*. The grounds on which the game is played are called *links*—a term nearly equivalent to downs in England. The open downs of Blackheath, near Greenwich, seem a fair specimen of the kind of ground suitable for the sport, and there we believe it is now played. Bruntsfield Links, a small common near Edinburgh, slope somewhat, and are irregular in form, but they afford a fine opportunity of showing skill in playing 'up and down the green,' a greater force being required in strokes in impelling the ball in one direction than in another. Undoubtedly the finest golfing ground in the kingdom is the Links of St Andrews, extending about three miles in length, and presenting all those irregularities which add interest and zest to what might otherwise be considered a tame and dull recreation. Perth, Musselburgh, North Berwick, Leven, and several other places in Scotland, are also in possession of capital golfing grounds.

Golf is entitled to be called a 'respectable' game. It is played almost exclusively by gentlemen, and is conducted leisurely, and without any appearance of boisterousness. A stranger would call it a spiritless sport—little better than walking. It possesses, however, the usual fascination of a game of skill and chance, and might appropriately be compared to billiards—the table being a green of a mile in length, the billiard rods clubs, the balls, instead of ivory, hard-stuffed leather, and the purses holes in the ground.

Golfs are formed of wood. The handle, which is straight, is generally about four and a-half feet long, and made of ash or hickory. To the lower part of this stalk is united, by compact tying, a flattish-curved end, which is the striking part; it is faced with horn, and to give force, is loaded with lead. To give a hold to the hands, the upper extremity of the stalk is wrapped with a rind of cloth. In regular practice, players use several golfs. Each has his set of three, four, five, or even as many as ten, which is carried by an attendant boy called a *caddie*; and from this set the golf appropriate for the stroke is selected. Sometimes the ball lies fairly on the grass, at other times it may have got into a hollow, or behind a stone or bush, and an instrument best adapted for sending it forward, or lifting it from its *hazard* or awkward situation, is in requisition. One of the golfs is technically called the *spoon*, from its use in lifting the ball from hollows; another is called the *iron*; and so on.

The ball is small, being not more than an inch and a-half in diameter; it is made of thick prepared hide, stuffed almost as hard as a stone with feathers; the outside is smooth, and painted white. At Edinburgh, St Andrews, and Musselburgh, the making of golfs and balls is a regular profession.

There are generally two players, one matched against the other. Each has his own ball. The game consists in driving the ball into certain holes made in the ground, which he who achieves in the fewest strokes obtains the victory. When four persons play, two of them are sometimes partners, and have but one ball, which they strike alternately. The holes are situated at the different ends and sides of the green, at irregular distances, and their number is optional. The usual number is five. A player must never touch his ball, unless in very particular circumstances, or when he takes it out of one of the holes. When commencing from a hole, the ball may be cocked up on the point of a dot of mud or turf, to allow of a commanding stroke; and this is called *teeing* the ball; but on all other occasions the ball must be struck or impelled by the golf from the place in which it happens to lie. Much depends on the first blow, and it should be given with great firmness of person and a good aim. Properly performed, the first stroke will send the ball two hundred yards, while at other times a blow in an awkward situation will advance it only a few feet. When the balls at length get near a hole, great skill is shown in *putting* or giving those delicate strokes which will not make the ball go beyond the hole, but, if possible, into it. A knowledge of the value of forces, the nature of the green, the influence of wind or weather, &c. is important in this and all other parts of the game, and is only to be gained by long experience.

At Edinburgh, Leith, Musselburgh, St Andrews (which may be considered as the head-quarters of golfing), Perth, and some other towns, there are associations or clubs of golfers, whose proceedings are governed by certain laws and regulations. The oldest in Edinburgh are the 'Edinburgh Burgess' and 'Bruntsfield Links' Golfing Societies. The Bruntsfield Links Society was instituted in 1761, and is limited to forty members, the uniform of which is declared 'to be a red jacket with green velvet collar and badge, bearing the arms of the society—namely, vert two golf clubs in saltier, with heads in chief proper, between four golf-balls argent: motto in an escroll below the shield, *Inde Salus* (Thence Health). The affairs of the society are managed by a captain, treasurer, secretary, and six councillors, elected annually. A gold medal, played for annually on the last Saturday of March, is retained by the winner for one year. A silver medal, played for annually on the last Saturday of September, is retained by the winner as his property. The following are the regulations prescribed by the society for playing the game; and which may be held as generally applicable:—

'1. No golfer, or caddie, to be allowed to dig tee within ten yards of the hole, and no ball to be teed nearer the hole than two club-lengths, nor farther from it than four, unless by consent of parties, and the ball to be teed on the ground.

2. Two or more parties meeting at the hole, the party who plays first to be allowed to play their second strokes before the succeeding party strikes off. But should the first parties' ball be in a hazard, that party shall allow the second party to pass.

3. Every hole must be played out with the same ball that is struck from the tee.

4. All loose sticks, stones, filth, nuisance, or other movable impediments, may be removed, if within one club-length of the ball; and in putting, all movable obstructions may be removed within four club-lengths of the hole—the distance to be measured with the club which the party is to play with. In the event of a ball getting into a hole, or any other hazard, the party shall be allowed to take it out, and standing immediately behind the hazard, drop it over his shoulder, and play it, losing a stroke.

5. No hole is gained unless the ball be holed (except by consent of parties), and a party losing his ball loses the hole.

6. In case of doubt as to the ball belonging to either party, neither ball shall be lifted unless by consent of parties, and the ball farthest from the hole must be played first.

7. If a ball be struck or moved by any one not of the party, it shall be brought back and played from where it was so struck or moved, the party previously dropping it over his shoulder.

8. In a match of more than two players, if a ball be struck twice or oftener, successively by one player, that side of the match loses the hole.

9. If a party play the adversary's ball, the adversary gains the hole.

10. If a party personally, or by his caddie, stop or touch any ball of the match, the adversary gains the hole.

11. If a ball stick fast into the ground, it may be loosened.

12. In playing for prizes, no competition to be allowed unless the parties be dressed in the uniform of the society.

13. In putting, the ball, if practicable, shall be played directly for the hole, but if the adversary's ball oppose the player, it shall be lawful to play upon it.'

Enthusiastic and long-experienced cultivators of golf at Edinburgh have been known to perform some remarkable feats in their favourite sport. 'Bets of a novel nature, which set the ordinary routine of the game entirely aside, are occasionally undertaken by the more athletic. An amusing and difficult feat, sometimes attempted from Bruntsfield Links, is that of driving the ball to the top of Arthur's Seat [a hill 800 feet high]. In this fatiguing undertaking, being a species of steeple-chase over hedges and ditches, the parties are usually followed by bottle-holders and other attendants, denoting the excessive exertion required. In 1798, bets were taken in the Burgess Golfing Society that no two members could be found capable of driving a ball over the spire of St Giles's steeple. The late Mr Scealeс of Leith, and the present Mr Smellie, printer, were selected to perform this formidable undertaking. They were allowed to use six balls each. The balls passed considerably higher than the weather-cock, and were found nearly opposite the Advocate's Close. The bet was decided early in the morning, in case of accident, the parties taking their station at the south-east corner of the Parliament Square. The feat is described as one of easy performance. The required elevation was obtained by a barrel-stave suitably fixed; and the height of the steeple, which is one hundred and sixty-one feet, together with the distance from the base of the church, were found to be much less than a good stroke of the club.'*

SHINTY—HURLING.

Shinty in Scotland, Hockey in England, and Hurling in Ireland, appear to be very much the same out-of-door sport. We shall describe shinty:—Two parties armed with sticks or clubs crooked at the lower extremity, and generally termed *gowffs* (golfs), throw down a little ball of wood, called a *shinty*, midway between two points, and the struggle is, which party will drive the ball to their 'hail,' as it is called, or the point allotted as their goal. It may be guessed by those who have never seen it, that there is smart smashing work at this game of shinty—most appropriately named so, seeing that the shins of the players are exposed to ticklish cracks from the clubs of their opponents when a lock takes place, and a dozen boys, perhaps, are struggling to get the ball out from among each other's feet. Hard though the ball be, and smart the strokes given, the activity and quick eyes of the players usually prevent any great injury from being received at shinty. By far the most serious mischief commonly resulting from it consists in the damage which it brings upon the neighbouring hawthorn hedges, which are sadly cut to pieces in order to provide clubs for the sport. The worst of it is that young hawthorn slips, with the root cut for the striking part, make by far the best clubs, and accordingly the evil done is radically ruinous to the unfortunate hedgerows.

Hurling is alluded to as follows by Mr and Mrs Hall, in their work on Ireland:—'The great game in Kerry, and indeed throughout the South, is the game of "Hurley"—a game rather rare, although not unknown, in England. It is a fine manly exercise, with enough of danger to produce excitement, and is, indeed, *par excellence*, the game of the peasantry of Ireland. To be an expert hurler, a man must possess athletic powers of no ordinary character; he must have a quick eye, a ready hand, and a strong arm; he must be a good runner, a skilful wrestler, and withal patient as well as resolute. In some respects it resembles cricket; but the rules and the form of the bats are altogether different; the bat of the cricketer being straight, and that of the hurler crooked.

The forms of the game are these:—The players, sometimes to the number of fifty or sixty, being chosen for each side, they are arranged (usually barefoot) in two opposing ranks, with their hurleys crossed, to await the tossing up of the ball, the wickets or goals being previously fixed at the extremities of the hurling-green, which, from the nature of the play, is required to be a level extensive plain. Then there are two picked men chosen to keep the goal on each side, over whom the opposing party places equally tried men as a counterpoise; the duty of these goal-keepers being to arrest the ball in case of its near approach to that station, and return it back towards that of the opposite party, while those placed over them exert all their energies to drive it through the wicket. All preliminaries being adjusted, the leaders take their places in the centre. A person is chosen to throw up the ball, which is done as straight as possible, when the whole party, withdrawing their hurleys, stand with them elevated, to receive and strike it in its descent: now comes the crash of mimic war—hurleys rattle against hurleys—the ball is struck and restruck, often for several minutes, without advancing much nearer to either goal; and when some one is lucky enough to get a clear "puck" at it, it is sent flying over the field. It is now followed by the entire party at their utmost speed; the men grapple, wrestle, and toss each other with amazing agility, neither victor nor vanquished waiting to take breath, but following the course of the rolling and flying prize; the best runners watch each other, and keep almost shoulder to shoulder through the play, and the best wrestlers keep as close on them as possible, to arrest or impede their progress. The ball must not be taken from the ground by the hand; and the tact and skill shown in taking it on the point of the hurley, and running with it half the length of the field, and, when too closely pressed, striking it towards the goal, is a matter of astonishment to those who are but slightly acquainted with the play. At the goal is the chief brunt of the battle. The goal-keepers receive the prize, and are opposed by those set over them: the struggle is tremendous—every power of strength and skill is exerted; while the parties from opposite sides of the field run at full speed to support their men engaged in the conflict; then the tossing and straining are at their height, the men often lying in dozens side by side on the grass, while the ball is returned by some strong arm again, flying above their heads, towards the other goal. Thus for hours has the contention been carried on, and frequently the darkness of night arrests the game without giving victory to either side. It is often attended with dangerous, and sometimes with fatal results.

Matches are made sometimes between different townlands or parishes, sometimes by barony against barony, and not unfrequently county against county; when the "crack men" from the most distant parts are selected, and the interest excited is proportionably great. About half a century ago, there was a great match played in the Phœnix Park, Dublin, between the Munster men and the men of Leinster. It was got up by the then lord-lieutenant and other sporting noblemen, and was attended by all the nobility and gentry belonging to the vice-regal court, and the beauty and fashion of the Irish capital and its vicinity. The victory was contended for a long time with varied success; and at last it was decided in favour of the Munster men, by one of that party running with the ball on the point of his hurley, and striking it through the open windows of the vice-regal carriage, and by that manœuvre baffling the vigilance of the Leinster goalsmen, and driving it in triumph through the goal. This man is still living; his name is Mat. Healy, and he has been many years a resident in London. Between twenty-five and thirty years ago, there were several good matches played on Kennington Common, between the men of St Giles's and those of the eastern parts of the

* Biographical sketches of 'Kay's Portraits.'

metropolis; the affair being got up by the then notorious Lord Barrymore and other noblemen who led the sporting circles of the time.'

FIVES—RACKETS—TENNIS.

The sport of striking a soft ball covered with leather against a wall, or throwing it upwards and catching it with the hand, seems to be of great antiquity, and in progress of time was regulated into the character of certain games. One of these, the most simple of the whole, is the striking of a ball against a wall, rebounding from which it falls with force on the ground, and in the rise is again struck in the same manner. The sustaining of this action for a specified number of times constitutes the game. In England it has been customary to call a game of this kind *fives*, from the ball being struck with the five fingers and palm of the hand. In Scotland it has for ages been called *cage* or *caitch*-ball. James I., in his quaint production descriptive of what should constitute the education and recreations of a prince, refers to caitch-ball. He remarks—'The exercises I would have you to use, although but moderately, not making a craft of them, are running, leaping, wrestling, fencing, dancing, and playing at the *caitch* or tennise, archerie, palle-malle, and such-like other fair and pleasant field-sports.'

Rackets is the same game as fives; but instead of striking the ball with the open hand, it is struck by a racket, which is an implement held in the hand formed of a frame and catgut. It is played against a high and broad wall, even in surface, with a smooth stone or earthen ground, from which the ball will rise evenly to the hand. Two persons play the match, each striking the ball alternately, and each strikes it in such a way as that his adversary may not be able to return it. But the adversary is supple of limb and quick of eye; and darting to the spot on which the ball is about to fall, endeavours to strike it with his racket, and preserve it from rolling on the ground. He who does not return the ball, either loses a point (or, as it is termed, an *ace*) or has his *hand out*—that is, forfeits the situation in which he would be able to add to his score of the game. Neither fives nor rackets are now played to the extent that they formerly were. There are still, however, several courts laid out for these games in the metropolis; and nowhere are they played so well as in the courtyards of the Queen's Bench and Fleet prisons, where many of the inmates endeavour to kill time by this species of amusement.

Tennis is a game similar with ball; it is played with a racket; but instead of striking the ball against a wall, it is struck over a central net, on each side of which the players stand. The game, which was once fashionable, we believe, is now scarcely ever practised.

TRAP-BALL.

This game, which is traceable as far back as the commencement of the fourteenth century, is played chiefly by boys. A wooden object called a 'trap,' resembling a shoe in shape, with a spring slip or tongue fastened in it by a joint, is laid on the ground. The ball is laid on one end of the spring; the other end is struck with a bat, and the ball rising is to be smartly struck. 'It is usual,' says Strutt, 'in the present game of trap-ball, when properly played, to place two boundaries at a given distance from the trap, between which it is necessary for the ball to pass when it is struck by the batsman; for if it falls withoutside of either, he gives up his bat, and is out; he is also out if he strikes the ball into the air and it is caught by one of his adversaries before it grounds; and again, if the ball, when returned by the opposing party, touches the trap, or rests within one bat's length of it; on the contrary, if none of these things happen, every stroke tells for one towards the striker's game.' In some country parts of England trap-ball is still a favourite sport.

FOOT-BALL.

Foot-ball is an old English sport, now little known in some parts of the country, but keenly played in others. It is played by means of a distended ox-bladder, tightly covered with dressed leather, and sewed up in a strong and secure way, so as to retain its full elasticity. This ball is thrown aloft in the air betwixt two parties of players, equidistant from each other; on one side and the other there is a fixed point or line called, as in the preceding case, the hail or hailing spot. The object, then, of each party is, by vigorous kicks, to propel the ball to the hailing-place behind their adversaries, on the attainment of which object the game is won. This game is less hazardous than shinty, and exercises fully both the strength and speed of the players. It is amazing how dexterous even very young boys become by continual practice at foot-ball; and skill in the application of a slight degree of force avails much more at this sport than greater strength unskilfully directed. The young men of the Scottish Border yet practise this game annually in various places; and few sights can be more exhilarating than to behold a strong body of them so employed, when the fleet foot of the shepherd vies for conquest with the vigour of the ploughman, and health and enjoyment beam unequivocally from every countenance.

QUOITS.

Contests in throwing or pitching heavy pieces of metal were practised by the ancient Greeks at their great periodical assemblages for athletic exercises. The piece of metal thrown was called the *discus*, from its round form. The main object in these contests was the cultivation of strength of arm, and victory was gained more from the ability of throwing heavy weights to a distance than from skill in attaining a particular mark.

From these ancient practices, first pursued by the Greeks, and then by the Romans, the game of quoits, or coits, appears to have been derived. The quoit is a circular plate of iron perforated in the middle, or, more properly, a flattish iron ring, concave on one side, and convex on the other, the concave or hollow side being undermost in throwing; and a notch being in the edge for the finger to press upon in delivering the throw. Quoits are of different sizes, to suit the different tastes and powers of players. 'To play at this game,' says Strutt, 'an iron pin called a "hob" is driven into the ground within a few inches of the top: and at the distance of eighteen, twenty, or more yards (for the distance is optional), a second pin of iron is also made fast in a similar manner; two or more persons, as four, six, eight, or more, at pleasure—who, divided into two equal parties, are to contend for the victory—stand at one of the iron marks, and throw an equal number of quoits at the other [the quoit being delivered from the hand by an upward and forward pitch with a steady aim at the pin, near which it should sink with its sharp edge in the turf]; the nearest of them to the hob are reckoned towards the game. But the determination is discriminately made: for instance, if a quoit belonging to A lies nearest to the hob, and a quoit belonging to B the second, A can claim but one towards the game, though all his other quoits lie nearer to the mark than all the other quoits of B; because one quoit of B being the second nearest to the hob, *cuts out*, as it is called, all behind it; if no such quoit had interfered, then A would have reckoned all his as one each. Having cast all their quoits, the candidates walk to the opposite end and determine the state of the play; then, taking their stand there, throw their quoits back again, and continue to do so alternately as long as the game remains undecided.' The dress in quoiting should be loose and easy, with no restraint from braces.

In some of the rural districts of England horse-shoes used to be employed as quoits; and in some parts of Scotland the quoits consist of round flat stones, games with which are called the 'penny-stanes.'

IN-DOOR AMUSEMENTS.

CHESS.

It has been justly observed, that among all the in-door amusements invented by man for the employment of the idle or the relief of the studious, chess stands preeminent. It is the most refined and ingenious of all games, and possesses a charm which has rendered it a favourite of the greatest characters, whether kings, warriors, or philosophers. As an amusement, it possesses an advantage as great as it is singular; being highly interesting in itself, and played with leisure, it requires no inducement of gain, and in consequence is rarely played for money. The glory of conquest is allowed to form a sufficient attraction.

Chess is of unknown origin and antiquity. Some writers have ascribed its invention to the Greeks, some to the Hindoos, others to the Chinese, and a fourth class to the Persians. There can be little doubt that it originated in the East, and at a very remote period of history; and it is certain that it has been known in Hindoostan and adjacent regions for at least two thousand years. From the Persians it was introduced by the Arabs or Moors into Spain; thence it found its way to France; and was made known in England during the reign of William the Conqueror, since which period it has been constantly played.

The name of the game, and also the names of the pieces with which it is played, have undergone many mutations in travelling from country to country; nevertheless, in the present terms which we employ, the semblance of the original Eastern appellations may be seen. In Hindoostan, it possesses the Sanscrit name of *Chaturanga*, which imports the four members of an army—elephants, horses, chariots, and foot-soldiers; the game being a scene of mimic warfare, in which these elements respectively act a peculiar part. The Persians corrupted the Sanscrit word into *chatrang*, which the Arabians softened into *shatranj;* from that appellation it passed into *scaochi*, *échecs*, and finally chess. By the French it is called *échecs*, and a chess-board they term *échiquier*.

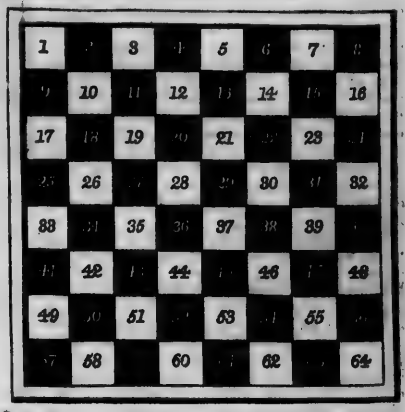
According to the modern European arrangement, the idea of elephants, horses, chariots, and foot-soldiers has been abandoned, and there have been substituted a king, queen, bishops, knights, castles or rooks, and pawns, forming six distinct classes of pieces. The term *bishop* is only English, being a substitution for elephant. The knights represent the horse-soldiers. The term *rook* is from the Eastern word *rokh*, a hero, and represents an armed chariot or fortification; the English give the piece the form of a castle. The pawns are the foot-soldiers, the name being from *peon*, an attendant.

The chess pieces made in India or China for sale to wealthy Europeans, are sometimes made of solid ivory, five or six inches high, and are exceedingly beautiful, no degree of labour being spared in the carving. The king and queen are seated on elephants, under a canopy; the bishops are camels, with archers as their riders; the knights are on horseback; the castles are elephants, with castles on their backs filled with warriors; and the pawns are soldiers, one a sergeant, another a drummer, another a fifer, and the rest are the ordinary fighting men. In England the pieces are usually made of bone or boxwood, with more or less taste, and from a low to a high price. The following is their common form:—

Pawn. Rook. Knight. Bishop. Queen. King.

Chess Men and Board.

There are two sets of pieces, of different colours; the one usually white, and the other red. A set consists of sixteen pieces, so that the entire number with which the game is played is thirty-two pieces. A set includes one king, one queen, two bishops, two knights, two rooks or castles, and eight pawns. Two parties play, each having a set of a different colour.



The game is played on a square board, divided into sixty-four squares, chequered black and white, as represented in the preceding figure. The *numbers* which are here shown on the squares do not exist on the chess-board; we have only marked them thus in order to illustrate the subjoined explanations of the method of playing the game.

In beginning to play the game, the first thing is to set the board. This is done by placing it before you, with a white square in the right-hand corner. As the players sit opposite each other at a table on which the board is placed, each has a white square on his right.

Next place the men in their appointed places. Let us suppose it is the white set of men. On the white corner square marked 64 place a rook or castle, and on the black corner, 57, place the other rook; on the black square, 63, place a knight, and on the white square, 58, place the other knight; on the white square, 62, place a bishop, and on the black square, 59, place the other bishop; on the black square, 61, place the king, and on the white square, 60, place the queen. This completes the first row, in which the king and queen stand supported on each side by their officers. The second row, marked 49, 50, 51, 52, 53, 54, 55, 56, is filled entirely with the eight pawns, which thus form a front guard to the pieces behind.

The red or dark set of pieces are placed in precisely the same order—a castle on 1 and 8, a knight on 2 and 7, a bishop on 3 and 6, the queen on 4, and the king on 5. It is a rule of the game that the queen must be placed at first on a square of her own colour—the white queen on a white square, and the dark queen on a dark square. The pieces and pawns on the side and front of each king and queen take their names from them; as king's bishop, king's knight; queen's bishop, queen's knight; king's pawn, &c.

When properly placed, four rows of squares are left unoccupied in the middle of the board, and this space forms the field or ground on which the early evolutions of the men take place.

The Moves.

It is a leading peculiarity of chess that each class of pieces has its own peculiar value and style of moving; some can move one way and some another, a system very different from that of the ordinary movements on a draught board.

A *pawn* moves only one square at a time, in a straight line forward, and takes the enemy diagonally. On being first moved, however, a pawn has the power of advancing either one square or two, as the player thinks fit, unless the square over which he leaps is commanded by a hostile pawn; so that if he were to rest on that square instead of leaping over it, he might be captured. In such a case the adverse pawn has the option of taking him, and placing himself on the square leaped over. A pawn cannot move backwards; but on getting to the further side of the board, upon the first line of the enemy, which is styled *going to queen*, he may be changed for any one of the pieces lost in the course of the game, and the piece chosen must be placed on the square at which the pawn has arrived. If not exchanged, he remains idle. The power of taking diagonally, possessed by a pawn, differs from that of all other pieces, who take in the direction in which they move; after every capture he continues to go forward as before. The king's bishop's pawn is reckoned the most valuable.

A *knight* moves obliquely, either backward or forward, upon every third square, including the square on which he stood; from black to white, or white to black, over the heads of the men, which no other piece is permitted to do. For example, a knight may leap from 36 to 19, 21, 26, 30, 42, 46, 51, or 53, passing over pieces in the intermediate squares. This property of leaping renders the knight particularly useful at the beginning of a game, as he can be brought into the enemy's ranks, and retire, notwithstanding any blockade; and should he check a king, without being himself liable to be taken, the king must remove, and cannot afterwards castle.

The *bishop* moves only diagonally over any number of squares, as far as they are open, forward or backward, but always on the colour he is first placed on. He can take at any distance when the road is open. For example, the bishop may move from 29 to 2, 8, 56, or 57. The king's bishop is usually considered the better one, as he can check the king on his original square, which the queen's bishop cannot.

The *rook* moves backward, forward, or sidewise, and as far as the squares are open. He is viewed as not very useful at the beginning of a game, but is particularly so towards the conclusion, by possessing the power of giving *checkmate* with the king alone, which neither the bishop nor knight can do.

The *queen* is the best piece on the board. She unites the powers of the bishop and rook, and her moves are therefore unlimited, provided the squares are open in her line of motion. As an example, she may be moved from 37 to 1, 5, 16, 23, 40, 58, 61, 64, or any other number in the direction of these, so that the squares are not blocked up. The preservation of the queen is always a matter of great importance in the game.

The *king* moves only one square at a time, but in any direction, either forward or backward, sideways or diagonally. But once in a game, he can move two squares to the right or left, which is termed castling. He can take any of the enemy's men in any square adjoining to him, provided he does not place himself in check. This *check* is a peculiarity in his condition. He has the privilege of never being taken; but this can scarcely be considered a benefit, since it only means that he must not move into or continue in a situation of danger. To be in such a situation, and liable to be captured if he were an ordinary piece, is called being in *check*. On the avoidance of this perilous situation the whole game depends; for the instant the king is checkmated, without the means of moving into a place of safety, the game is at an end. The adversary has the victory.*

To the foregoing account of the moves and powers of the respective pieces, may be added the following explanation of terms:—

Castling.—This, as above hinted at, is allowed once in the course of a game: it consists in moving the king to the second square to the right or left of that where he originally stood, and placing the castle or rook on the square over which he leaped. Castling is a means adopted to secure the king from attack; but it is not allowable—1. When the king or the rook with which you would castle has already been moved; 2. When the king is in check; 3. When the king would require to pass over a square in which he would be checked; and 4. When the king has a piece between himself and the rook.

Check.—When the king is in a situation that, were he an inferior piece, he would be taken, notice is given by the adversary, by saying the word '*check*,' and the player must adopt some means of removing him from this position.

Double check is when the king is in check by two pieces at once. He may emancipate himself from single or double check—1. By capturing the piece which is attacking him, either by himself or one of his party—and this is only available in double check, if one of the pieces does not guard the other; 2. By interposing a piece between him and the attacking piece; and 3. By removing to another square, of which no hostile piece has the command.

Checkmate is when no means of escape or conquest is available; the king is then said to be checkmated, and the game terminates. One king cannot give check to another, as it would place him in a similar situation. The term checkmate is said to be a corruption of the Eastern words *chah-mat* (the king is dead).

Stale-mate (from *stall*, a place of fixture) is applied to the condition of the king when he is compelled to remain in his place, by being surrounded in such a manner by his own or his adversary's pieces, that he could not move without going into check, and has at the same time no means of moving other pieces. The game is then considered *drawn*—that is, not won by either party.

Laws of Chess.

The game commences by the two parties determining by lot, or concession, which shall have the first move. After this the moves are taken alternately, one piece at a time. The principle of advance is to push forward the men gradually against those of the enemy, each party calculating beforehand what will be the effect of any particular move. The following are old-established laws in reference to playing:—

1. If you touch your man you must play it, except it would expose your king to check, in which case you can only move the king, if it be practicable.
2. As long as you retain a hold of your man, you are at liberty to place him where you think proper, though you may have him set down on a square.
3. If you have removed your hand from a man, he must remain where he is.
4. If you touch one of your adversary's men, he may insist on your taking it if you can; and when you cannot, then you must move your king, provided the move do not put him in check.
5. If you make a false move, by accident or otherwise, your adversary can oblige you to move the king; but if he plays without having noticed the false move, it cannot be recalled.
6. If your adversary challenge you with a check, while in reality the king is not in check, and you move your king or any other

* In a battle between the French and English, in the year 1117, an English knight seizing the bridle of Louis le Gros, and crying to his comrades, 'The king is taken!' the prince struck him to the ground with his sword, saying, 'Ne sçais tu pas qu' aux échecs on ne prend pas le roi?'—('Dost thou not know that at chess the king is never taken?') The meaning of which is, that at the game of chess, when the king is reduced to that pass that there is no way for him to escape, the game ends; because the royal piece is not to be exposed to an imaginary affront.—*Philidor on Chess.*

men in consequence, you may retract it if you discover the error before he has made his next move.

7. You are not to give check to your adversary's king, when, by doing so, you would expose your own king to check.

8. If your adversary give check, but without giving the usual warning of 'check,' you are not obliged to notice it till he does; but if he discover that he should have done so on his next move, and then warn you, each must retract his move, and the king be removed out of check or protected.

9. After your king or rook has moved, you cannot castle.

10. In each fresh game the players have the first move alternately; but if a player give the advantage of a piece—that is, agrees to start with one piece less than his antagonist—he who gives the advantage has the first move.

Hoyle's Rules for Chess.*

1. Move your pawns before your pieces, and afterwards bring out the pieces to support them; therefore the king's, queen's, and bishop's pawns should be the first played, in order to open the game well.

2. Do not therefore play out any of your pieces early in the game, because you thereby lose moves, in case your adversary can, by playing a pawn, make them retire, and he also opens his game at the same time; especially avoid playing your queen out, till your game is tolerably well opened.

3. Avoid giving useless checks, and never give any unless to gain some advantage, because you may lose the move if the adversary can either take or drive your piece away.

4. Never crowd your game by having too many pieces together, so as to prevent your men advancing or retreating, as occasion may require.

5. If your game should be crowded, endeavour to free it by exchanges of pieces or pawns, and castle your king as soon as convenient; afterwards bring out your pieces, and attack the adversary where weakest.

6. When the adversary plays out his pieces before his pawns, attack them as soon as you can with your pawns, by which you may crowd his game, and make him lose moves.

7. Never attack the adversary's king without a sufficient force; and if he attack yours, and you cannot retaliate, offer exchanges; and should he retire when you present a piece to exchange, he may lose a move. It may also be sometimes expedient to act in this manner, in case of other attacks.

8. Play your men in guard of one another, so that if any be taken, the enemy may also be captured by that which guarded yours, and endeavour to have as many guards to your piece as your adversary advances others upon; and, if possible, let them be of less value than those he assails with. When you cannot well support your piece, see if, by attacking one of his that is better, or as good, you may not thereby save yours.

9. Never attack but when well prepared, for thereby you open your adversary's game, and prepare him to pour in a strong attack upon you, as soon as your weaker one is over.

10. Never play till you have examined whether you are free from danger by your adversary's last move; nor offer to attack till you have considered what harm he would be able to do you by his next moves, in consequence of yours.

11. When your attack is in a prosperous way, never be diverted from it by taking any piece, or other seeming advantage your adversary may purposely throw in your way, with the intent that, by your taking the bait, he might gain a move which would make your design miscarry.

12. When, in pursuing a well-laid attack, you find it necessary to force your adversary's defence with the loss of some pieces, if, upon counting as many moves forward as you can, you find a prospect of success, sacrifice a piece or two to gain your end: these bold attempts make the finest games.

13. Never let your queen stand so before the king as that your adversary, by bringing forward a rook or a bishop, might check your king if she were not there; for you could hardly save her, or perhaps at best must sacrifice her for an inferior piece; as, for example, place the white king on 61, the queen on 53; the black king on 4, and the rook on 16; which last, if moved to 13, must be taken by the white queen, who, in return, would be taken by the black king, because the white queen could not otherwise be moved without putting the king on check to the black rook.

14. Let not your adversary's knight fork your king and queen, or king and rook, or queen and rook, or your two rooks, at the same time; for in the two first cases, the king being forced to go out of check, the queen or the rook must be lost; and in the two last, a rook must be lost, at best, for a worse piece. Place the white queen on 5, the rook on 7, and a black knight on 37. The latter piece, if moved to 22, will fork both the queen and rook, and consequently one of them must be lost for the knight.

15. Take care that no guarded pawn of your adversary's fork two of your pieces; knights and rooks are particularly liable to this mode of attack; also guard against either a check by discovery or a stale-mate.

16. When the kings have castled on different sides of the board, attack with the pawn you have on that side where the adversary has castled, advancing the pieces, especially the queen and rooks, to support them; and if the adversary's king have three pawns on a line in front, he should not stir them till forced to it.

17. Endeavour to have a move in ambuscade; that is, place the queen, bishop, or rook behind a pawn or a piece in such a manner as that, upon playing that pawn or piece, you discover a check upon your adversary's king, and consequently may often get a piece or some other advantage by it. Suppose the black king on 6, a white bishop on 41, and a pawn on 34, by moving the pawn to 36, a check by the white bishop is discovered upon the black king.

18. Never guard an inferior piece or pawn with a better if you can do it with a pawn, because that better piece may in such a case be, as it were, out of play.

19. A pawn pushed on and well supported often costs the adversary a piece; but one separated from the others is seldom of any value. And whenever you have gained a pawn or other advantage, and are not in danger of losing the move thereby, make as frequent exchanges as you can.

20. If each player have three pawns upon the board, and no piece, and you have a pawn on one side of the board, and the other two on the other side, and your adversary's three are opposite to your two, march with your king to take his pawns; and if he move to support them, go on to queen with your single pawn; and if he attempt to hinder it, take his pawns, and push yours to queen; that is, to move a pawn into the adversary's back row, in order to make a queen.

21. At the latter end of the game, each party having only three or four pawns on different sides of the board, the kings are to endeavour to gain the move, in order to win the game; for example, the white king placed on 54, and the black king on 37, white would gain the move by playing to 53, or black to 36, and in both cases the adverse king would be prevented from advancing.

22. When the adversary has no more than his king and one pawn on the board, and you a king only, you can never lose that game if you bring and keep your king opposite to your adversary's, when he is immediately either before or on one side of his pawn, and only one square between the kings. This must, then, be a stale-mate or drawn game.

23. Never cover a check with a piece that a pawn pushed upon it may take, for fear of only getting that pawn for it; put a black rook on 7, and a pawn on 40; the white king on 63, and a knight on 61: the white king being on a check to the rook, if the check be covered by moving the white knight to 56, the black pawn could then be moved to 48, and take the knight.

24. Do not crowd your adversary's king with your pieces, lest you inadvertently give a stale-mate, which is a drawn game.

25. Do not be too much afraid of losing a rook for an inferior piece; though a rook is better than any other except the queen, yet it seldom comes into play so as to operate until the end of the game; and it is generally better to have a worse piece in play than a superior out.

26. When you have moved a piece which your adversary drives away with a pawn, that is a bad move, your enemy gaining a double advantage. At this nice game no move can be indifferent. Though the first move may not be much between equally good players, yet the loss of one or two more, after the first, makes the game almost irretrievable; but if you can recover the move or the attack (for they both go together), you are in a fair way of winning.

27. If ever your game be such that you have scarce anything to play, you have either brought out your piece wrong, or, what is worse, not at all; for if you have brought them out right, you must have variety enough.

28. Do not be much afraid of doubling a pawn; two in a direct line are not disadvantageous when surrounded by three or four others; three together are strong (as three white pawns on 26, 35, and 37); but four (as 44 in addition) that make a square with the help of other pieces, well managed, form an invincible strength, and probably may produce you a queen; on the contrary, two pawns, with an interval between (as on 35 and 37), are no better than one; and if you should have three over each other in a line (as 26, 34, and 42), your game cannot be in a worse situation.

29. When a piece is so attacked that it is difficult to save it, give it up, and endeavour to annoy your enemy in another place; for it often happens, that whilst your adversary is pursuing a piece, you either get a pawn or two, or such a situation as ends in his destruction.

30. Supposing your queen and another piece are attacked at the same time, and by removing your queen you must lose the piece, if you can get two pieces in exchange for her, rather do that than retire, for the difference is more than the worth of a queen; besides, you preserve your situation, which is often better than a piece; when the attack and defence are thoroughly formed, if he who plays first be obliged to retire by the person who defends, that generally ends in the loss of the game on the side of him who attacks.

31. Do not aim at exchanges without reason; a good player will take advantage of it to spoil your situation and mend his own; but when you are strongest, especially by a piece, and have not an immediate check-mate in view, then every time you exchange your advantage increases. Again, when you have played a piece, and your adversary opposes one to you, exchange directly, for he wants to remove you: prevent him, and do not lose the move.

32. Every now and then examine your game, and then take your measures accordingly.

33. At the latter end of the game, especially when both queens are off the board, the kings are capital pieces; do not let your

* Hoyle is a very old author, and his works on chess and other games are well known; they are now found in all forms, abridged or altered to suit modern players.

king to idle; it is by his means generally you must get the move and the victory.

34. As the queen, rooks, and bishops operate at a distance, it is not always necessary in your attack to have them near your adversary's king; they do better at a distance, as they cannot be driven away.

35. When there is a piece you can take, and that cannot escape, do not hurry; see where you can make a good move elsewhere, and take the piece at leisure.

36. It is not always right to take your adversary's pawn with your king, for very often it happens to be a safeguard and protection to him. Place a black rook on 8, with a pawn on 45, and the white king on 55, and he will be sheltered by the black pawn from the attack of the rook.

Recommendations as to some of the Foregoing Rules.

1. Whether you play the open or close game, bring out all your pieces into play before you begin the attack; for if you do not, and your adversary should, you will always attack or be attacked at a great disadvantage; this is so essential, that you had better forego an advantage than deviate from it; and no person can ever play well who does not strictly practise this. In order to bring out your pieces properly, push on your pawns first, and support them with your pieces, by which your game will not be crowded, and all your pieces will be at liberty to play and assist each other, and so co-operate towards attaining your end; and either in your attack or defence, bring them out so as not to be driven back again.

2. When you have brought out all your pieces, which you will have done well if you have your choice on which side to castle, then consider thoroughly your own and adversary's game, and not only resolve where to castle, but likewise to attack where you appear strongest and your enemy weakest. By this it is possible you will be able to break through your adversary's game, in which some pieces must be exchanged. Now pause again, and survey both games attentively, and do not let your impetuosity hurry you on too far; at this critical juncture (especially if you still find your adversary very strong) rally your men, and put them in good order for a second or third attack, still keeping them close and connected, so as to be of use to each other. For want of this method, and a little coolness, an almost sure victory is often snatched out of a player's hands, and a total overthrow ensues.

3. At the last period of the game, observe where your pawns are strongest, best connected, and nearest to queen; likewise mind how your adversary's pawns are disposed, and compare these things together; and if you can get to queen before him, proceed without hesitation; if not, hurry on with your king to prevent him. I speak now as supposing all the higher pieces are gone; if not, they are to attend your pawns, and likewise to prevent your adversary from going to queen.—*See Hoyle, Jones, &c.*

To these rules and recommendations we add the following advice:—Conduct your game with coolness, take time to consider the chances for and against in moving, and do not give up the contest till all hope is gone of a retrieval. An anecdote has been told of two gentlemen playing at chess, one of whom found his game so hopeless that he declared himself beat; when an onlooker of more skill said he would undertake to win the game for him by three moves, without the possibility of being counteracted. The offer was accepted, and the game at once retrieved and won. As this is a particularly instructive incident, we shall state the positions of the pieces on the board in reference to the numbers of the squares on the diagram:—

The black rook was at 9, the black knight at 18, the black bishop at 20, the black king at 22, the black rook at 40, black pawns at 25, 26, 30, 35, and 36, and the black queen at 42. The white king was at 7, the white rooks at 61 and 63; the white knight at 47, and a white pawn at 38. The white has the move. The white knight at 47 gives check at 32; the black rook at 40 takes it. The white rook at 63 gives check at 23; the black king takes it. The white rook at 61 gives checkmate at 21. Thus the white, by a few dexterous moves, completely paralyses the adversary, and wins the game.

By writing an account of moves, it is possible for adversaries to carry on games at chess though at a great distance from each other. Thus chess clubs in London are known to carry on matches with clubs in Edinburgh or Paris, or even with a club in India. Games of this kind sometimes last for years.

The Morals of Chess, by Dr Franklin.

The game of chess is not merely an idle amusement; several very valuable qualities of the mind, useful in the course of human life, are to be acquired or strengthened by it, so as to become habits, ready on all occasions; for life is a kind of chess, in which we have often points to gain, and competitors or adversaries to contend with, and in which there is a vast variety of good and ill events that are in some degree the effects of prudence or the want of it.

By playing at chess, then, we may learn—

1. *Foresight*, which looks a little into futurity, and considers the consequences that may attend an action; for it is continually occurring to the player, 'If I move this piece, what will be the advantage or disadvantage of my new situation? What use can my adversary make of it to annoy me? What other moves can I make to support it, and to defend myself from his attacks?'

2. *Circumspection*, which surveys the whole chess-board, or scene of action; the relation of the several pieces, and their situations; the dangers they are respectively and repeatedly exposed to; the several possibilities of their aiding each other; the probabilities that the adversary may make this or that move, and attack this or the other piece; and what different means can be used to avoid his stroke, or turn its consequences against him.

3. *Caution*, not to make our moves too hastily. This habit is best acquired by observing strictly the laws of the game, such as, 'If you touch a piece, you must move it somewhere;' 'if you set it down, you must let it stand.' And it is therefore best that these rules should be observed, as the game thereby becomes more the image of human life, and particularly of war; in which, if you have incautiously put yourself into a bad and dangerous position, you cannot obtain your enemy's leave to withdraw your troops, and place them more securely, but you must abide all the consequences of your rashness.

And lastly, we learn by chess the habit of *not being discouraged by present bad appearances in the state of our affairs*, the habit of *hoping for a favourable change*, and that of *persevering in the search of resources*. The game is so full of events, there is such a variety of turns in it, the fortune of it is so liable to sudden vicissitudes, and one so frequently, after long contemplation, discovers the means of extricating one's self from a supposed insurmountable difficulty, that we are encouraged to continue the contest to the last, in hopes of victory from our own skill, or at least of giving a stalemate, by the negligence of our adversary; and whoever considers—what in chess he often sees instances of—that success is apt to produce presumption and its consequent inattention, by which more is afterwards lost than was gained by the preceding advantage, while misfortunes produce more care and attention, by which the loss may be recovered, will learn not to be too much discouraged by any present success of his adversary, nor to despair of final good fortune upon every little check he receives in the pursuit of it.

That we may, therefore, be induced more frequently to choose this beneficial amusement in preference to others which are not attended with the same advantages, every circumstance which may increase the pleasure of it should be regarded; and every action or word that is unfair, disrespectful, or that in any way may give uneasiness, should be avoided, as contrary to the immediate intention of all parties, which is to pass the time agreeably.

Therefore, 1. If it is agreed to play according to the strict rules, then those rules are to be exactly observed by both parties, and should not be insisted on for one side while deviated from by the other; for this is not equitable.

2. If it is agreed not to observe the rules exactly, but one party demands indulgences, he should then be as willing to allow them to the other.

3. No false move should ever be made to extricate yourself out of a difficulty or to gain an advantage; for there can be no pleasure in playing with a person once detected in such unfair practices.

4. If your adversary is long in playing, you ought

not to hurry him, or express any uneasiness at his delay. You should not sing, nor whistle, nor look at your watch, nor take up a book to read, nor make a tapping with your feet on the floor, or with your fingers upon the table, nor do anything that may distract his attention; for all these things displease, and they do not show your skill in playing, but your craftiness or your rudeness.

5. You ought not to endeavour to amuse and deceive your adversary, by pretending to have made bad moves, and saying that you have now lost the game, in order to make him secure and careless, and inattentive to your schemes. This is fraud and deceit, not skill in the game.

6. You must not, when you have gained a victory, use any triumphing or insulting expression, nor show too much of the pleasure you feel; but endeavour to console your adversary, and make him less dissatisfied with himself, by every kind and civil expression that may be used with truth, such as, 'You understand the game better than I, but you were a little inattentive;' or, 'You had the best of the game, but something happened to divert your thoughts, and that turned it in my favour.'

7. If you are a spectator while others play, observe the most perfect silence; for if you give advice you offend both parties—him against whom you give it, because it may cause the loss of his game; him in whose favour you give it, because, though it be good, and he follows it, he loses the pleasure he might have had if you had permitted him to think until that had occurred to himself. Even after a move or moves, you must not, by replacing the pieces, show how they might have been placed better; for that displeases, and may occasion disputes or doubts about their true situation. All talking to the players lessens or diverts their attention, and is therefore unpleasing. Nor should you give the least hint to either party by any kind of noise or motion; if you do, you are unworthy to be a spectator. Should you have a mind to exercise or show your judgment, do it in playing your own game, when you have an opportunity, not in criticising, or meddling with, or counselling the play of others.

Lastly, if the game is not to be played rigorously according to the rules as afore-mentioned, then moderate your desire of victory over your adversary, and be pleased with one over yourself. Snatch not eagerly at every advantage offered by his unskilfulness or inattention; but point out to him kindly that by such a move he places or leaves a piece exposed and unsupported; that by another he will put his king in a dangerous situation, &c. By this generous civility (so opposite to the unfairness before forbidden) you may, indeed, happen to lose the game to your opponent, but you will win what is better, his esteem, his respect, and his affection, together with the silent approbation and good-will of impartial spectators.

When a vanquished player is guilty of an untruth to cover his disgrace, as, 'I have not played so long'—'his method of opening the game confused me'—'the men were of an unusual size,' &c. all such apologies must lower him in a wise person's eyes, both as a man and as a chess-player; and who will not suspect that he who endeavours to shelter himself under such untruths in trifling matters, is no very sturdy moralist in affairs of greater consequence, where his fame and honour are at stake? A man of proper pride would scorn to account for being beaten by one of these excuses, even were it true; because they all at the moment have the appearance of being untrue.

To this may be added a few 'cautions' of a different but equally important nature from a recent number of the 'Quarterly Review:'—

'Chess not until the business of the day is fairly done, and you feel that you have earned your amusement.

Chess not in mixed society, when it is likely that your antagonist and yourself will be missed from the circle by either hostess or company.

Chess not with persons much older than yourself, when you feel sure that you can beat them, but not sure that they will relish it.

Chess not with your wife, unless you can give her odds, and then take care rather to overmatch yourself.

Play not into the "small hours," lest the duties of the next day should suffer from scanty rest or late rising.

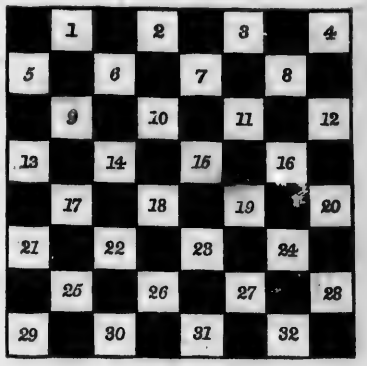
Do not commend your adversary's play when you have won, or abuse your own when you have lost. You are *assuming* in the first case, and *detracting* in the last.

Lastly, Idolise not chess. To hear some people talk, one might think there was "nothing else remarkable beneath the visiting moon." Chess is not a standard for measuring the abilities of your acquaintance—nor an epitome of all the sciences—nor a panacea for all human ills—nor a subject for daily toil and nightly meditation. It is simply a recreation, and only to be used and regarded as such. The less selfish you are in its pursuit—the clearer head—the more patience—the better temper you bring to the practice of it, the better will you illustrate the merits of chess as the most intellectual of games, and establish your own character as a philosopher even in sport.'

DRAUGHTS.

Draughts is a game with a chequered board and men, of much less antiquity than chess, and is perhaps to be considered a degenerate descendant of that noble sport. In France it is called *les dames*, from having been a favourite game with ladies; and in Scotland this signification is preserved in the term *dam-brod*, the name universally applied by the common people to the draught-board.

Draughts is played on a chess-board, or a board chequered precisely in the same manner, with thirty-two white, and thirty-two black squares. The board, however, is placed before the players differently; in chess there must be a white square in the right-hand corner, but in draughts the right-hand corner must be black (that is, supposing you to play on the white squares). The following is a representation of a draught-board, numbered for the sake of illustration, and placed as it should be in playing:—



Draught-Board.

The game is played by two persons, who sit opposite to each other. Each party has a set of twelve men, the colour of the two being different for the sake of distinction. The men are generally round and flat pieces of wood; one set white, and another black; those of the neatest kind are turned out of boxwood and ebony.

The men may be placed either on the white or black squares, but the whole must be put on one colour only. It is customary in England to place all upon the white, and to have, as above, a black square on the right. In Scotland the black are played upon, when there is consequently a white square to the right. We go upon the supposition that the play is on the white squares, and have numbered them in the above figure accordingly.

The movements in draughts are very simple: a man can move only one square at a time, and diagonally,

never straight forward or sideways. If an enemy's man stand in the way, no move can take place, unless there be a vacant square beyond into which the piece can be lifted. In this case the man leaped over is taken; he is removed from the board.

The grand object of the game, then, is to clear the board of the enemy's men, or to hem them in so that they cannot move; and whichever party does so first gains the victory. As no piece can move more than one step diagonally at a time, there can be no taking till the two antagonists come to close quarters; and the pushing them cautiously into each other's neighbourhood is the principal art in the game.

When the men on either side have cleared their way by taking, or found an open path to the opposite side of the board, they become invested with a new power of movement: by reaching the first row of squares on the opposite side, the piece is entitled to be *crowned*, which is done by placing a man on the top of it. Thus crowned, the man may move backwards, but always diagonally, and one square at a time, as before. This power of moving and taking either forwards or backwards, renders it of consequence to get men crowned; and if two or three on each side gain this honour, the game becomes more interesting, and may speedily be determined.

Immediately after crowning, great art is shown in blocking up one or more of your adversary's men, by the aid of which to accomplish a series of decisive moves. For instance, supposing you have detained your adversary's piece at 4, while he has others situated on 25 and 26—and supposing you have pieces on 12 and 19, with a crowned man at 14, you may, by giving him your 12 and 19, exchange two pieces for three, which is commonly equivalent to winning the game. Again, supposing you have pieces on 13, 22, 30, and a crowned one on 26, and your adversary a piece on 5, with others scattered in the direction of 16, 8, 7, you may, by successively pushing before him your pieces on 13 and 22, gain a formidable exchange.

In beginning to play, much depends on having the first move; and the rule is, that in playing several games each party takes the first move alternately.

If a player touch one of his men, he must play it. If a player omit to take a man when it is in his power to do so, his adversary can *huff* or *blow* him—that is, either take the man, or insist upon his own man being taken. The practice is at once to lift the man which ought to have taken yours.

We present the following as an example of playing a game, in which white loses. The letters N, C, F, T, at the head of the columns, signify *Number, Colour, From, To*:—

N	C	F	T	N	C	F	T
1	B	11	15	28	W	30	25
2	W	22	18	29	B	29	22
3	B	15	22	30	W	26	17
4	W	25	18	31	B	11	15
5	B	8	11	32	W	20	16
6	W	29	25	33	B	15	18
7	B	4	8	34	W	24	12
8	W	25	22	35	B	18	27
9	B	12	16	36	W	31	24
10	W	24	20	37	B	14	18
11	B	10	15	38	W	16	11
12	W	27	24	39	B	7	16
13	B	16	19	40	W	20	11
14	W	22	16	41	B	18	23
15	B	15	19	42	W	11	8
16	W	24	15	43	B	23	27
17	B	9	14	44	W	8	4
18	W	18	9	45	B	27	31
19	B	11	25	46	W	4	8
20	W	32	27	47	B	31	27
21	B	5	14	48	W	24	20
22	W	27	23	49	B	27	23
23	B	6	10	50	W	8	11
24	W	16	12	51	B	23	18
25	B	3	11	52	W	11	8
26	W	28	24	53	B	18	15
27	B	25	29	&c.	W	loses.	

It is not considered fair for any bystander to advise what motions should be taken, or for a player to wait longer than five minutes between each move. The draught player, therefore, must on all occasions act with much more promptitude and decision than in the case of chess. In short, draughts is a very ticklish game. A single false step may lead to irretrievable ruin; and it is only after long experience in figuring in the mind what would be the result of particular movements that proficiency is attained.

BACKGAMMON.

Backgammon is the modern name of a game of considerable antiquity in England, where it was formerly known by the appellation of 'the tables.' The words *back-gammon* have been ascribed to the Welsh tongue, in which they are said to signify *little battle;* but Strutt, with greater plausibility, traces the term to the Saxon '*bac* and *gamen*—that is, back-game; so denominated because the performance consists in the two players bringing their men back from their antagonist's tables into their own; or because the pieces are sometimes taken up and obliged to go back—that is, re-enter at the table they came from.' Whatever be the etymology of the term, the game has been long established in the country; and, as a fireside amusement of a decorous and exciting nature, is a favourite among clergymen, squires, farmers, and retired professional persons.

Backgammon is played with an apparatus consisting of a board or tables, men or pieces, dice, and dice-boxes. The introduction of dice into the game, and their constant use in determining moves, makes backgammon essentially a game of chance, and therefore brings two players of unequal talents nearer a level than other diversions in which skill is the sole or predominant element.

The backgammon board consists of two parts or tables, generally united by a hinge in the middle, by which they can be shut up as a box. Each table possesses twelve points, six at each end. These points are coloured white and black alternately; but this variation of colour has no reference to the game, and is only done to make the points more easily counted.

The game is played by two parties, and with 30 pieces or men; each party has 15 men, one set of 15 being black, and the other white. In beginning the game, the men are placed on certain points on the tables, as shown in the following figure.

The game is played with two dice and two dice-boxes. The dice are common to both; but each party uses his own dice-box, and the throws are alternate.

Each die is a perfect cube, marked on its sides with dots from 1 to 6. The 1 is called *ace*, the two *deuce*, the three *tre* or *trois*, the four *quatre*, the five *cinque*, and the six *size*. At every throw the two dice are employed; consequently a person may throw from two up to twelve—that is, two *aces* up to two *sizes*.

If a player throw *doublets*, or both dice of one number, double the number of dots is reckoned; thus by a throw of two aces the player does not count two, but four.

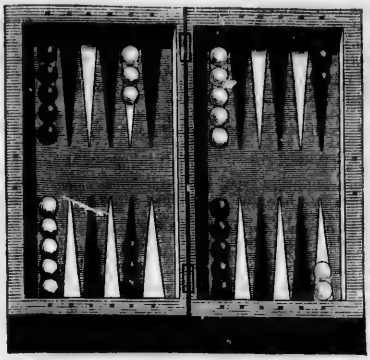
These numbers thrown or accidentally turned up by the dice, bear a reference to the points on the tables. In order to understand this connection between the dice and the men, the learner must observe how the men are placed on the points, and the rules by which their shifting from one to another is governed.

The tables are here spread out as if two partners were seated, and about to begin to play. The party owning the white men is seated at W, and the party owning the black men at B. We shall call one party White, and another Black. White counts round from the ace point of Black, and Black counts round from the ace point of White. These ace points are respectively seen to have two men upon them in opposite corners of the same table.

The grand object of the game is for each party to get

all his men played round into the table containing the aces, removing them from point to point agreeable to the throws of the dice.

W



B

The Backgammon Table.

In throwing, the number upon each die turned up may be reckoned by itself, or collectively, with the number on the other die. Thus if quatre be thrown by one die, and size by the other, a man can be advanced four points, and another six points; or one man can be advanced ten points, always providing that a point is open to suit this movement to it. No point can be moved to if covered by two men belonging to the adversary. If covered by only one man, which is called a *blot*, then that man can be hit, and be removed from the point, and placed on the bar between the tables, his place being taken by the man who has won it.

The removal of a man to the bars throws a player considerably behind in the game, because the man must remain out of the play till the dice turn up a number corresponding to one open point on the adversary's table. Being fortunate to get an open point by this means, the man must be entered and wrought round from thence, as in the case of others in the set to which he belongs. The frequent occurrence of this hitting of a blot gives an adversary a great advantage, and allows him to win the gammon.

There are two kinds of victory—winning the hit, and winning the gammon. The party who has played all his men round into his own table, and by fortunate throws of the dice has borne or played the men off the point first, wins the *hit*.

The gammon may be explained as follows:—When you have got all your men round to your own table, covering every point, and your adversary has a man out, then you are enabled to *bear* or lift your men away. If you can bear all away, so as to clear your table before the adversary gets his man placed by a throw on your table, you win the gammon. If the adversary has been able to bear one before you have borne all your men, it reduces the victory to a hit.

Two hits are reckoned equal to one gammon in playing matches. To win two games out of three is called winning the *rub*, as at whist.

Hoyle's Directions for Bearing Men.

If a player has taken up two of the adversary's men, and happens to have two, three, or more points made in his own tables, he should spread his men, that he either may take a new point in his tables, or be ready to hit the man which the adversary may happen to enter. If he finds, upon the adversary's entering, that the game is upon a par, or that the advantage is on his own side, he should take the adversary's man up whenever he can, it being 25 to 11 that he is not hit: except when he is playing for a single hit only; then, if playing the throw otherwise gives him a better chance for it, he ought to do it.

It being 5 to 1 against his being hit with double dice, he should never be deterred from taking up any one man of the adversary's.

If he has taken up one of the adversary's men, and should happen to have five points in his own tables, and forced to leave a blot out of his tables, he should endeavour to leave it upon doublets preferable to any other chance, because in that case the odds are 35 to 1 that he is not hit; whereas it is only 17 to 1 that he is hit upon any other chance.

When the adversary is very forward, a player should never move a man from his own quatre, trois, or deuce points, thinking to bear that man from the point where he put it, as nothing but high doublets can give him any chance for the hit. Instead of playing an ace or a deuce from any of those points, he should play them from his own size or highest points; so that throwing two fives or two fours, his size and cinque points being eased, would be a considerable advantage to him; whereas, had they been loaded, he must have been obliged to play otherwise.

It is the interest of the adversary to take up the player as soon as he enters. The blot should be left upon the adversary's lowest point—that is to say, upon his deuce point rather than upon his trois point; or upon his trois point rather than upon his quatre point; or upon his quatre point preferable to his cinque point—for a reason before-mentioned: all the men the adversary plays upon his trois or his deuce points are deemed lost, being greatly out of play; so that those men not having it in their power to make his cinque point, and his game being crowded in one place, and open in another, the adversary must be greatly annoyed by the player.

If the player has two of the adversary's men in his tables, he has a better chance for a hit than if he had more, provided his game is forwarder than that of his antagonist; for if he had three or more of the adversary's men in his tables, he would stand a worse chance to be hit.

When a player is running to save the gammon, if he should have two men upon his ace point, and several men abroad, although he should lose one point or two in putting his men into his tables, it is his interest to leave a man upon the adversary's ace point, because it will prevent his adversary from bearing his men to the greatest advantage, and at the same time the player will have a chance of the adversary's making a blot, which he may chance to hit. However, if a player finds, upon a throw, that he has a probability of saving his gammon, he should never wait for a blot, as the odds are greatly against his hitting it, but should embrace that opportunity.

BILLIARDS.

This sport may be said to combine the principles of bowls, golf, and some other games in which objects are impelled from the hand. Whether the game was invented in France or England is not clearly ascertained; but as it is mentioned by Shakspeare, it is at least as old in this country as the sixteenth century. In the present day, it is pursued in every civilised country, but principally by the higher or leisurely classes of society. In France it is much more common than in England, where its character has suffered materially by the game having been made the subject of large gambling speculations. It is unfortunate that such should be the case, for no game is to be considered so purely scientific: it is *dynamics*, or certain laws of motion, put into practical operation; the hits or concussions of the balls exhibiting some of the finest examples of divergent forces.

Billiards is played with a table, certain kinds of rods, and balls. The table varies in size; that in most common use being from eight to twelve feet long, and from four and a-half to six feet in width. Whatever be its dimensions, it requires to be perfectly level and smooth.

It is ordinarily made of small pieces of wood joined together, so as to avoid warping, and these being brought to a dead level by planing, the surface is covered with fine green cloth. All round is a ledge two to three inches high, and stuffed as a cushion. The table is furnished with six pockets, one at each of the four corners, and one on each side at the middle. The mouths of these pockets or purses are level with the surface, so as to allow the balls to glide easily into them.

The balls are of ivory, about an inch and a-half in diameter. Two are white, and one is red. One of the white is distinguished by a spot. There are usually two players; he who owns the plain ball is called *Plain*, and he who owns the spotted ball is termed *Spot*. The red ball belongs to neither, but is aimed at by both.

The rods or bills used by the players are of two kinds, and different lengths, to suit different players. The ordinary kind of rod is called a *cue*. It is long and smooth, with one end thick and heavy, and the other more slender. The other kind of rod is termed a *mace*; it has a club-like extremity, and is much less frequently used. Almost all players employ cues of the length which suits them.

In playing, the left hand is rested with the palm undermost on the table. The palm is hollowed, and the thumb, close to the forefinger, is raised up to form a bridge or rest for the cue. The hand is to be at the distance of about six inches from the ball. The cue is lightly held in the right hand, the thick end uppermost, the blow being struck with the small extremity. Thus held, in a free but firm manner, and resting on the channel between the forefinger and thumb, the cue is given a sharp run forward, so as to hit the ball in the required direction, and with that exact degree of force which will make it perform the desired feat. To prevent slipping, the point of the cue is generally chalked.

The table is laid out as follows for play:—At the distance of about a foot from one end, in the centre of the table, is a small dot or mark in the cloth, on which the red ball is placed. At a similar distance from the other, which we shall call the upper end of the table, a line is made across by a chalked string; and in the middle of this line there is a mark on which the white ball of a player is to be struck from.

The leading principle in the sport is for a player to impel his white ball against the red ball, and drive them into a pocket or pockets; or to perform a still greater feat of striking the red ball, the adversary's ball, and his own ball, into pockets. It must be understood that nothing is gained by a player striking his own ball direct into a pocket; anybody could do that, and there would be no science in it. The merit consists in impelling balls against each other, at such an exact angle that one or both may be pocketed; and the skill displayed in this is often very surprising.

In setting out in a game, the first stroke or lead is determined by lot. This is called *stringing* for the lead. Each player hits his ball from the *string* or line, and he who causes it to rebound from the bottom cushion and come back nearest to the upper cushion, has the lead and the choice of the balls.

The first player begins by striking his ball from the string against the red ball, as already mentioned; and if he pockets the balls, he scores a certain number, and begins again. So long as he pockets, the adversary does not get a stroke. If the player miss, the adversary takes his turn. Both now play alternately, hitting the balls where they chance to lie; but when one pockets, he starts afresh by striking from the string.

A person in attendance *scores* or keeps reckoning of the play. He does this by means of two indices moving round a figured circle, and when one is gained, he turns the index accordingly. Technically, he is told to score one for Plain or one for Spot.

Hitherto we have spoken of billiards as one game, but it is necessary to explain that at least twelve different games may be played. We shall notice the two following as those in common use:—

Winning and Losing Game.

This is played by two persons, and twenty-one points are the game. The following are Hoyle's regulations for playing it:—

1. The game commences, as usual, with stringing for the lead, as well as the choice of balls. The ball in stringing to be placed within the circle, and the striker must stand within the corners of the table. The ball which rebounds from the bottom cushion, and comes nearest to the cushion within the baulk, takes the lead, and has the choice of balls.

2. If the adversary to the first person who has strung for the lead should cause his ball to touch the other, he loses the lead thereby.

3. When a player holds the ball in stringing or leading, his lead is forfeited.

4. If a ball is followed by either mace or cue beyond the middle hole, it is no lead; the adversary of course may force him to renew his lead.

5. After every losing hazard, the ball is to be replaced within the nails or spots, and within the ring.

6. The place for the red ball is on the lowest of the two spots at the bottom of the table.

7. The red ball being holed, or forced over the table, is placed immediately on the lowest of the two spots; the present player is, besides, compelled to see it thus replaced, else he cannot score any points while it is off the spot; the stroke of course is foul.

8. When the player misses his adversary's ball, he loses one; but should he at the same time pocket his own ball, he then loses three besides the lead.

9. The adversary's ball, and the red ball also, being struck by a player.

10. When the striker, after making a hazard or carambole, accidentally forces his own or either of the other balls over the table, he loses all the advantages he has gained besides the lead.

11. When a ball is accidentally forced over the table, the striker loses the lead.

12. To strike your adversary's ball and the red one too, you score two; this is called a carom or carambole.

13. To hole the adversary's or the white ball, you score two. To hole the red ball you score three.

14. When the striker holes his own ball off his adversary's, he scores two points; but if he holes his ball off the red, he scores three. But if he holes both the red and his adversary's balls, he scores five. If the player holes the red and his own ball, he scores six.

15. If the striker holes his own and his antagonist's ball, he scores four.

16. When the striker plays at the white ball, and should hole the red after that, and his own ball besides, he scores five—two for holing the white, and three for the red.

17. When the striker, playing on the red ball first, should pocket his own as well as his adversary's ball, he scores five points; three for holing off the red, and two for holing his own.

18. If the player holes his adversary's ball, his own, and the red, he scores seven points; namely, two for holing off the white, two for the adversary's holing, and three for holing the red ball.

19. Should the striker hole his own ball off the red, and hole the red and his adversary's too at the same stroke, he scores eight points thus: three for holing himself off the red, three for the red itself, and two for holing his adversary.

*** All the above games, commencing with the thirteenth, are scored without the caramboles; the following are those in which the caramboles occur:—

20. When a carambole is made, and the adversary's ball is pocketed, four are scored; namely, two for the carambole, and two for the white.

21. If the striker pockets the red ball after making a carambole, he scores five; two for the carambole, and three for the red.

22. If the striker should hole both his adversary's and the red ball, after having caramboled, he scores seven; two for the carambole, two for the white, and three for the red ball.

23. When a carambole is made by striking the white ball first, and the striker's ball should be holed by the same stroke, four points are gained.

24. When the striker makes a carambole by striking the red ball first, and should hole his own ball at the same time, he gains five points; three for the red losing hazard, and two for the carambole.

25. If in playing at the white ball first, you should make a carambole, and hole your own and adversary's ball at the same time, you score six points; namely, two for each white hazard, and two for the carambole.

26. The striker wins seven points when he caramboles off the red ball, and holes his own and his adversary's ball; namely, two for the carom, two for the white, and three for the red hazard.

27. When the player caramboles by playing first at the white, and should also hole his own and the red, he scores seven points; namely, two for the carom, two for the white losing hazard, and three for the red winning hazard.

28. When the player caramboles by hitting the red ball first, and also holes his own and the red, he scores eight; namely, two for the carom, three for the red winning hazard, and three for the red losing hazard.

29. Should a player carambole on the white ball first, and then hole his own ball and his opponent's, and the red ball besides, he then scores nine; thus two for the carom, two for each white, and three for the red hazard.

30. If a carambole is done by striking the red ball first, and at the same stroke the player holes his own ball, the red ball, and his adversary's too, he gains ten points, on the principle of the preceding rule.

31. When your adversary's ball is off the table, and the other two balls are upon the line or inside of the stringing nails at the leading end of the table, it is named being within the baulk. The player, therefore, striking from the ring, must make his ball rebound from the opposite cushion, so as to hit one of the balls within the baulk; if he misses, he loses a point.

32. Now and then it occurs that after the red ball has been forced over the table or holed, one of the white balls has so taken up the place of the red ball, that it cannot be replaced in its proper situation without touching it. In such, the marker holds the red ball in his hand, while the player strikes at his opponent's ball.

33. And directly after the stroke, replaces it on the proper spot, in order that it may not prevent a carambole from being made.

34. When the striker plays a wrong ball, it is reckoned a foul stroke.

35. When the player is about to strike at or play with the wrong ball, none in the room can with propriety discover it to him, his partner excepted, if they are playing a double match.

36. When the player, after making a carom or a hazard, should, either with his hand, cue, or mace, move either of the balls remaining on the table, the stroke is foul.

37. If the striker should play with the wrong ball, and this erroneous play should not be discovered by his opponent, the marker is obliged to score, and he is a winner of all the points he has gained by the stroke.

38. None can move or touch a ball without permission of the adversary.

39. Sometimes a ball happens to be changed in the course of the game, and it cannot be ascertained by which player; in that case the balls must be used as they then are, and the game so played out.

40. It is a foul stroke when the striker, in the act of playing, should happen to touch his ball twice.

41. Sometimes the player accidentally touches or moves his ball, without intending to strike. In that case he loses no point, but his ball may be replaced as it originally stood.

42. When a striker's adversary or spectator impedes the player's stroke by accident or design, he has a right to renew his stroke.

43. Should a player, in the act of striking, hit his ball, and cause his cue or his mace to go over it or past it, he forfeits a point.

44. No striker can play upon a running ball; such stroke is foul.

45. An accidental stroke is to be considered good if attended with the proper effect, though, by missing the cue, &c. it is not intended as such.

46. Should a striker, in attempting to play, not hit his ball at all, it is no stroke, and he is to try again.

47. Should the striker or his adversary, in the act of playing, move by accident or design the opponent's white or red ball from the place it occupied on the table, the stroke is foul.

48. When the striker's ball and either of the other balls are so close as to touch each other, and in striking at the former, either of the latter is moved from its place, the stroke is foul.

49. Whoever stops a running ball in any way loses the lead, if the opponent does not like the situation of the ball he has to play at next time.

50. It may happen that a striker, after having made a carambole or a hazard, interrupts, by accident, the course of his own ball; in this case he scores nothing, as the stroke is foul.

51. Should a player impede the course of his own ball, after having made a miss, and it is running towards the hole, and it is so thought also by the marker, he loses three points.

52. To stop, retain, or impede the adversary in the act of striking, is deemed foul.

53. Should a player in any way interrupt, stop, or drive his adversary's ball out of its course when running towards a pocket, he forfeits three points.

54. Even blowing upon a ball whilst running makes a stroke foul; and should the striker's ball be making its way towards a hole, and he blow upon it, he loses two points by such act.

55. If a mace or cue is thrown upon the table during a stroke, it is baulking the striker, and the stroke is considered foul.

56. No play is deemed correct when both feet are off the ground.

57. If the table is struck when a ball is running, the stroke is deemed foul.

58. A player leaving a game unfinished loses that game.

59. Some tables are so uneven that they give way toward the pockets. In case a ball should go to the brink of a hole, and after there resting for a few seconds, should drop into it, such tells for nothing; and the ball must be again placed on the brink before the adversary strikes again; and should it fall into the hole again the moment the striker has played his ball, so as to frustrate the intended success of his stroke, the striker's and his opponent's balls must be placed as they were originally, and the strokes played over again.

60. When a player's mace or cue should touch both balls in the act of striking, the stroke is foul; and if noticed by his opponent, nothing is gained on the points made by the stroke; and the opponent may, if he pleases, part the balls also.

61. Those who agree to play with the cue must do so during the whole of the match; but if no conditions of this sort have been made, the player may change as he pleases. No player can, without permission of the adversary, break his agreement.

62. If a foul stroke is made, the adversary may either part the balls and play from the ring, or, if the balls should be favourably placed for himself, permit the striker to score the points he had gained, which the marker is bound to do in all cases where the balls are not broken.

63. All agreements are specially binding. For instance, those who agree to play with the cue point and point, cannot use the butt without permission; but they may use the long cue: and the same with those who agree to play with the butt only.

64. A striker wins, and the marker is obliged to score all the points he gains, by unfair strokes, if the adversary neglects to detect them.

65. He who offers to part the balls, and the adversary agreeing to the same, the offerer loses the lead by such proposal.

66. None (unless they belong to a four match) have a right to comment on a stroke, whether fair or foul, until asked; and in the above case, none but the player and his partner can ask it.

67. When disputes arise between the players, the marker alone decides, and there is no appeal from his decision. But it may occur he might have been inattentive to the stroke; in that case he is to collect the sense of the disinterested part of the company; namely, those who have no bets on the stroke, and their decision is to be final.

The White Game.

Two players are engaged as above, and the striking is alternate. The general principle is, that you win if you pocket the red ball or your adversary's ball, but invariably lose if by any means you hole your own ball. The number of points in the game is twelve. The following are Hoyle's regulations:—

1. In beginning, string for the lead, and the choice of balls, if you please.

2. When a person strings for the lead, he must stand within the limits of the corner of the table, and also must not place his ball beyond the stringing nails or spots; and he who brings his ball nearest the cushion wins the lead.

3. If after the first person has strung for the lead, and his adversary who follows him should make his ball touch the other, he loses the lead.

4. Should the player hole his own ball, either in stringing or leading, he loses the lead.

5. Should the leader follow his ball with either mace or cue past the middle hole, it is no lead; and if his adversary chooses, he may make him lead again.

6. The striker who plays at the lead must stand with both his feet within the limits of the corner of the table, and must not place his ball beyond the stringing nails or spots; and his adversary (only) is bound to see that he stands and plays fair, else the striker wins all the points he made by that stroke.

7. When a hazard has been lost in either of the corner holes, the leader is obliged (if his adversary requires it) to lead from the end of the table where the hazard was lost; but if the hazard was lost in either of the middle holes, it is at the leader's option to lead from either end of the table he pleases.

8. If the striker misses his adversary's ball, he loses one point; and if, by the said stroke, his ball should go into a hole, over the table, or on a cushion, he loses three points; namely, one for missing the ball, and two for holing it, &c.; and he loses the lead.

9. If the striker holes his adversary's ball, or forces it over the table, or on a cushion, he loses two points.

10. If the striker holes his own ball, or forces it over the table, or on a cushion, he loses two points.

11. If the striker holes both balls, or forces them over the table, or on a cushion, he loses two points.

12. No one has a right to take up his ball without permission from his adversary.

13. If the striker, by accident, should touch or move his own ball, not intending to make a stroke, it is deemed as an accident; and his adversary, if he requires it, may put the ball back in the place where it stood.

14. If the striker forces his adversary's ball over the table, and his adversary should chance to stop it, so as to make it come on the table again, the striker nevertheless wins two points.

15. When the striker forces his own ball over the table, and his adversary should chance to stop it, so as to make it come on the table again, the striker loses nothing by the stroke, and he hath the lead; because his adversary ought not to stand in the way, or near the table.

16. If the striker misses the ball, and forces it over the table, and it should be stopped by his adversary, as before mentioned, he loses one point, and has the lead, if he chooses.

17. If the striker, in playing from a cushion or otherwise, by touching the ball, makes his mace or cue go over or past it, he loses one point; and if his adversary requires it, he may put the ball back, and may make him pass the ball.

18. If the striker, in attempting to make a stroke, doth not touch his ball, it is no stroke; and he must try again to make a stroke.

19. If, when the balls are near each other, and the striker by

accident should make his ball touch the other ball, it is nevertheless a stroke, though not intended as such.

20. If the striker who plays the stroke should make his adversary's ball go so near the brink of a hole as to be judged to stand still, and afterwards should fall into it, the striker wins nothing; and the ball must be put on the same brink where it stood, for his adversary to play from the next stroke.

N.B.—There is no occasion for challenging the ball if it stops, as some imagine.

21. If the striker's ball should stand on the brink or edge of a hole, and if, in playing it off, he should make the ball go in, he loses three points.

22. If a ball should stand on the brink or on the edge of a hole, and it should fall into the hole before or when the striker has delivered his ball from his mace or cue, so as to have no chance for his stroke, in that case the striker and his adversary's balls must be placed in the same position, or as near as possible thereto, and the striker must play again.

23. The striker is obliged to pass his adversary's ball, more especially if he misses the ball on purpose; and his adversary may, if he chooses, oblige him to place the ball where it stood, and play until he has passed.

24. If the striker plays both balls from his mace or cue, so that they touch at the same time, it is deemed a foul stroke; and if it is discovered by his adversary, and a dispute should arise thereon, he has an undoubted right to appeal to the disinterested company then present; and if determined by the majority of the disinterested company, and the marker, if needful, to be a foul stroke, then it is at his adversary's option (if not holed) either to play at the ball or take the lead. But if, by the above-mentioned stroke, his adversary doth not discover it to be a foul stroke, then the striker may reckon all the points he made by the said stroke, and the marker is obliged to mark them.

25. No person hath a right to discover to the player whether the stroke is fair or foul, until it is asked.

26. If by a foul stroke the striker should hole his adversary's ball, he loses the lead.

27. If by a foul stroke the striker holes his own or both balls, or forces his own or both balls over the table, or on a cushion, he loses two points.

28. If the striker plays on a ball when it is running or moving, it is deemed as a foul stroke.

29. If the striker plays with both feet off the ground, without the permission of his adversary, it is deemed a foul stroke.

30. If the striker plays with a wrong ball he loses the lead, if his adversary requires it.

31. If the ball should be changed in a hazard or on a game, and it is not known by which party, the hazard must be played out by each party with their different balls, and then changed.

32. If the striker plays with his adversary's ball, and holes or forces the ball he played at over the table, &c. it is deemed a foul stroke.

33. If the striker plays with his adversary's ball, and holes or forces the ball he played with over the table, &c. he loses two points; and if he missed the ball, three points.

34. If the striker plays with his adversary's ball, and misses it, he loses one point; and if his adversary discovers that he hath played with the wrong ball, he may part the balls, and take the lead if he pleases.

35. In all the before-mentioned cases of the striker's playing with the wrong ball (if discovered), his adversary must play with the ball the striker played at throughout the hazard, or part the balls and take the lead.

36. Whoever stops a ball when running with hand, stick, or otherwise, loses the lead, if his adversary does not like the ball he has to play at the next stroke.

37. Whoever retains his adversary's stick when playing, it is deemed foul.

38. If the striker stops or puts his own ball out of its course when running towards either of the holes, and if adjudged by the marker and the disinterested company then present to be going into a pocket, if he missed the ball he loses one point, and, if going into a hole by the same stroke, three points.

39. If the striker stops or puts his adversary's ball out of the course when running towards or into a hole, or puts his adversary's ball into a hole, it is deemed a foul stroke.

N.B.—If the adversary doth the same as in the foregoing rules, he is subjected to the same penalties as the striker.

40. He who shakes the table when the ball is running makes it a foul stroke.

41. He who throws his stick upon the table, so as apparently to be of any detriment to his adversary, makes it a foul stroke.

42. He who blows on the ball when running makes it foul. And if his own ball was running towards or near the hole, he loses two points.

43. He who leaves the game before it is finished, and will not play it out, loses the game.

44. Any person may change his mace or cue in playing, unless otherwise previously agreed on.

45. When two persons are at play, and no particular terms of agreement have been made, neither party has a right to object to either mace or cue being played within the said game.

46. When the parties agree to play mace against cue, the mace player hath no right to use a cue, nor has the cue player any right to use a mace during the game or match, without permission from his adversary.

47. When a person agrees to play with the cue, he must play every ball within his reach with the point thereof; and if he agrees to play with the butt of the cue, he has no right to play with the point thereof, without permission from his adversary.

48. When the parties agree to play point and point of the cue, neither of them has a right to use a butt during the game or match without permission, &c., but they have a right to play with the point of a long cue over a mace, &c.

49. When the parties agree to play all point with the same cue, they have no right to use any other during the game or match.

50. Whoever proposes to part the balls, and his adversary agrees to it, the proposer thereof loses the lead.

51. Two missings do not make a hazard, unless it is previously agreed on to the contrary.

52. In all cases, the betters are to abide by the players on the determination of the hazard, or on the game; and the betters have a right to demand their money when their game is over, to prevent disputes.

53. Every person ought to be very attentive, and listen for the stroke, before he opens the door of a billiard-room.

54. The striker has a right to command his adversary not to stand facing him, nor near him, so as to annoy or molest him in the stroke.

55. Each party is to attend to his own game, and not to ask if his adversary's ball be close?—if he touches his ball?—if he can go round the ball?—nor any question of the like tendency; nor is any one to be set right, if going to play with the wrong ball.

56. When four persons play, the game is fifteen in number, and each party has a right to consult with and direct his partner in anything respecting the game, &c.; and the party who makes two missings before a hazard is made, is out, and it is his partner's turn to play; but if, after the two missings have been made by the party, his adversary should hole a ball, so as to make a hazard, the stroke following the said two missings have been made, yet the party who did not make the two missings is to play, as he cannot be supposed to be out who has not made a stroke.

BAGATELLE.

The large and inconvenient size of billiard-tables has led to the introduction of bagatelle-tables—*bagatelle* being the French word for anything trifling. A bagatelle-table is usually about five feet long and eighteen inches broad; it is lined with cloth, and a game is performed on it with balls and a cue or mace. The balls are small ivory spheres, and the sport very much consists in striking one or more into holes at one end of the board. To perform this and other feats, some skill and experience are required, and the sport is far from unamusing in a cheerful parlour circle. Of late years, bagatelle-tables have become very common in the houses of the middle classes of society; they possess the recommendation of being purchaseable at a small expense.

GAMES WITH CARDS.

Playing-cards are small oblong pieces of pasteboard, on which divers figures are impressed in two principal colours—red and black. Fifty-two cards form a *pack*, or complete set for playing any game. The pack consists of four *suites* or kinds of cards, thirteen in each, distinguishable by their respective marks. The suites are *hearts*, *diamonds*, *clubs*, and *spades*. Hearts and diamonds are red; clubs and spades are black. The thirteen in each suite consist of ten cards, distinguishable by spots, from one to ten; and three cards, ordinarily called *court cards*, from being impressed with certain figures having a semblance of court costume—one of these is the *king*, another the *queen*, and a third the *knave* or *jack*.

Of the origin of playing-cards, and the signification of their respective markings, there has been no small controversy among antiquaries. The general opinion has been that cards were invented about the year 1392, for the purpose of amusing Charles VI. of France, at the time he was afflicted with a mental depression or derangement. But it has been ascertained that, in 1387, John I., king of Castile, issued an edict forbidding the playing of cards in his dominions; and from this, as well as from some of the names given to the cards, it is extremely probable that playing-cards were known in Europe as early as about the middle of the fourteenth century. At first, the outlines of the figures on the cards were made by stamps, and afterwards filled up by the hand; but soon after the invention of engraving on blocks, the devices were produced by wood,

and sufficiently finished, so that the impressions did not require any assistance from the pencil.

The names—hearts, diamonds, spades, and clubs—which the English give to the cards, appear to be in a great measure a corruption of the original Spanish and French appellations, or a misapplication of terms to the original symbols. We find the following account given of the design and names of the cards in the work of an anonymous writer:—

'The inventor proposed, by the figures of the four suites, or colours, as the French call them, to represent the four states or classes of men in the kingdom.

By the *Cæsars* (hearts) are meant the *gens de chœur*, choir men, or ecclesiastics; and therefore the Spaniards, who certainly received the use of cards from the French, have *copas*, or chalices, instead of hearts.

The nobility or prime military part of the kingdom are represented by the ends or points of lances or pikes, and our ignorance of the meaning or resemblance of the figure induced us to call them spades. The Spaniards have *espades* (swords) in lieu of pikes, which is of similar import.

By diamonds are designed the order of citizens, merchants, and tradesmen, *carreux* (square stone tiles or the like). The Spaniards have a coin, *dineros*, which answers to it; and the Dutch call the French word *carreux*, *stieneen*, stones and diamonds, from the form.

Treste, the trefoil leaf, or clover grass (corruptly called clubs), alludes to the husbandmen and peasants. How this suite came to be called clubs is not explained, unless, borrowing the game from the Spaniards, who have *bossos* (staves or clubs) instead of the trefoil, we gave the Spanish signification to the French figure.

The history of the four kings, which the French in drollery sometimes call the cards, is *David*, *Alexander*, *Cæsar*, and *Charles* (which names were then, and still are, on the French cards). These respectable names represent the four celebrated monarchies of the Jews, Greeks, Romans, and Franks, under Charlemagne.

By the queens are intended *Argine*, *Esther*, *Judith*, and *Pallas* (names retained in the French cards), typical of birth, piety, fortitude, and wisdom, the qualifications residing in each person. Argine is an anagram for *regina* (queen by descent).

By the knaves were designed the servants to knights (for knave originally meant only servant; and in an old translation of the Bible, St Paul is called the knave of Christ); but French pages and valets, now indiscriminately used by various orders of persons, were formerly only allowed to persons of quality; esquires (*escuiers*), shield or armour-bearers.

Others fancy that the knights themselves were designed by those cards, because *Hogier* and *Lahire*, two names on the French cards, were famous knights at the time cards were supposed to be invented.'

With the entire pack of fifty-two cards, or with only a portion of it, there have been innumerable games, and there are so still; to notice the whole of these, however, would occupy too much of our space, and we propose to confine our explanations to what are considered respectable and harmlessly-amusing games.

WHIST.

All games at cards, in our opinion, are insignificant in comparison with *whist*, which is believed to take its name from an old exclamation to keep silence; it must at least be conducted noiselessly, and with extreme attention. The whole structure of the game is ingenious, and a result of just calculation. Its rules have all been carefully studied, and there seems to be a sufficient reason why each has been instituted. The game is a happy blending of skill and chance; skill being the most important element, and chance only accessary, in order to impart a due relish or piquancy to the sport, and deprive highly-skilled players of being always certain of the victory.

Whist is played by four persons, two forming a party or side. The four sit at a square table, one on each side, partners being opposite to each other. The table should be covered with cloth, to permit an easy lifting of the cards. Before commencing the game, a pack of cards is laid on the table, the faces undermost. The parties then *cut* for partners; that is, they leave it to chance to determine who shall be partners. This is done by each person lifting or *cutting* a portion of the cards from the heap or pack, and the two who have the highest cards play together.

The *value* of the cards is as follows:—As already stated, there are four suites, each suite consisting of thirteen cards, ten being common, and three being court cards. The card in each suite which has but one mark is called the *ace*; and this ace is the highest in value in all cases except in cutting for partners, when it is the lowest. The next highest is the king, the next the queen, the next the knave; then the ten, nine, eight, and so on down to the two, or *deuce*, which is the lowest. In playing whist, one suite is of higher value than any of the other three; but which suite shall possess this temporary distinction depends on chance in dealing out the cards; the last card dealt out is turned up, and the suite to which it belongs is called *trumps*;* trumps, then, is the suite of the highest value. In the course of a game, the trump suite may of course vary at every deal.

The *cutting* of the pack, as above-mentioned, determines who are to be partners, and at the same time determines who is to *deal*. The rule is, that he who had the lowest card in cutting is the dealer. This person *shuffles* the cards; that is, mixes them in any way he thinks proper, always keeping the backs towards him. Having done this, his adversary is entitled to shuffle the cards also; indeed each person has a right to shuffle them, but this is seldom done. Being duly shuffled, the pack is laid on the table (always backs uppermost) before the *youngest hand*, or the person sitting to the right hand of the dealer; and he cuts it, by lifting off a portion and laying it down. The dealer now puts the lower portion on the top of the portion laid off, and is prepared for dealing.

Dealing must be neatly performed; the dealer holding the pack in his left hand, lifts off the top cards with his right, and distributes them, one to each, all round. He begins with the person on his left, who is called the *elder hand*, then the person opposite, then the youngest hand, and then himself. He thus goes thirteen rounds, the last card which he holds in his hand falling to his own share. This last card he turns up, and it determines the suite to be trumps. The dealer, therefore, has at least always one trump in his hand, but this advantage is supposed to be neutralised by the adversaries having a knowledge of one of his cards. The trump card lies on the table exposed till the first trick is played. Any exposure of a card in dealing, by real or pretended accident, is strictly provided against. The following are Hoyle's

Rules for Dealing.

If a card is turned up in dealing, the adverse party may call a new deal if they think proper; but if either of them has been the cause of turning up such card, then the dealer has the option.

If a card is faced in the deal, there must be a fresh deal, unless it happens to be the last card.

It is the duty of every person who plays to see that he has thirteen cards. If any one happens to have only twelve, and does not find it out till several tricks are played, and that the rest have their right number, the deal stands good, and the person who played with the twelve cards is to be punished for each revoke, provided he has made any. But if any of the rest of the players should happen to have fourteen cards, in that case the deal is lost.

The dealer should leave his trump card upon the table till it is his turn to play; and after he has mixed it with his other cards, no one has a right to demand what card was turned up, but may ask what suite is trumps: in consequence of this law, the dealer cannot name a wrong card, which otherwise he might have done.

None of the players may take up or look at their cards while they are dealing out: when this is the case, the dealer, if he should happen to miss deal, has a right to deal again, unless it arises from his partner's fault; and if a card is turned up in

* The term *trump* is believed to be a corruption of *triumph*, meaning the triumphant card.

dealing, no new deal can be called, unless the partner was the maker of it.

If any person deals, and instead of turning up the trump, he puts the trump card upon the rest of his cards, with the face downwards, he loses his deal.

Playing the Game.

The cards being all dealt, each takes up his hand, which he must scrupulously prevent any of his antagonists or his partner from seeing. The cards should be ranged like a fan in the left hand, so that its holder can see all his cards at a glance. It is advisable, for the sake of order and convenience, to arrange the cards in the hand, all of a suite together. Each having his cards sorted, the game commences by the elder hand, or person on the left of the dealer, laying down a card. The person on his left follows, and so on to the dealer, who lays down last.

The principle of playing is as follows:—Whatever suite the first card is of, that suite must, if possible, be followed by each party round; but if one party has not a card of that suite, he can lay down one of any other suite. Should he do so, and afterwards lay down a card of the suite which he appeared to be deficient of, he has committed a *revoke*, and a penalty is exacted in loss of three tricks. It is necessary, for the sake of fair play, to be very rigorous in punishing a revoke.

The four cards laid down in a round is called a *trick*. The trick is won in various ways. The card of the highest value wins. For example, if the first player lays down a deuce of spades, the second a three of spades, the third a four of spades, and the fourth a five of spades, this last person wins; his party gains a trick. But should one of the players not have a spade in his hand, and lays down a deuce of the suite which happens to be trumps, that card wins. No matter how high in value the cards laid down are, the trick is always won by a trump card, though it were only a deuce. If several trump cards be laid down, or all be trumps, then the highest trump card wins. The ace of trumps is the highest card.

When the trick is played, it is lifted by the person who wins, and placed beside him in a heap on the table, back uppermost; and he continues to take up all other tricks his party wins. Thus one on each side collects and reckons the tricks.

Whoever wins the trick becomes elder hand, and plays first in next round; and so on each winner plays first till all the cards are played out.

A pack produces thirteen tricks, but none is counted till after six. For instance, if one party wins four tricks, they do not count; and the other party which has nine tricks counts three. Should one party gain all the tricks, it counts seven.

The ace, king, queen, and knave of trumps are called *honours*. These have a peculiar value in reckoning towards the game. Should each person hold one honour, honours do not count; but should two partners hold three honours between them, they score two points; when they hold four, they score four points.

The game consists of ten *points*, and these may be gained by tricks and by honours. Should a party make six tricks and hold four honours, it has won the game at one deal. It will therefore be perceived that honours, the possession of which is a matter of mere chance, exert a powerful influence in gaining the victory over an adversary.

Only at one time in the game do honours not count; this is when the party is at nine; the odd point to make up to ten being only gained by tricks. When a party is at eight, and the first trick has been played, one of that party, who holds two honours, may ask his partner if he has one honour; and if he says he has, the three honours are at once shown, which concludes the game. There are rules for calling honours, which we subjoin.

In the course of playing the game, no one must drop the slightest hint how he wishes his partner to play, or make any other observation calculated to mislead or direct. Neither may any one, before his partner has played, inform him that he has or has not won the trick; even the attempt to take up a trick, though won before the last partner has played, is deemed very improper.

All parties must play by their own perceptions of what would be most judicious. There is only one exception to the rule of keeping silence, which is in the case of a revoke. If a person happens not to follow suite, or trump a suite, the partner is at liberty to inquire of him whether he is sure he has none of that suite in his hand. This indulgence must have arisen from the severe penalties annexed to revoking, which affects the partners equally, and is now universally admitted.

The great knack in playing whist is to *remember what is out*, and hence, by the play of both partner and adversaries, to have a shrewd guess of what each holds in his hand. A primary rule is to follow a partner's lead, as it is presumed that no one, in playing first, is without a good reason for tabling a particular suite.

The term *finessing* signifies the attempt to gain an advantage; thus if you have the best and third best card of the suite led, you put on the third best, and run the risk of your adversary having the second best; if he has not, which is two to one against him, you are then certain of gaining a trick.

A *loose card* is a card of no value, and consequently the most proper to throw away; it would be folly to lay a good card down, when it must clearly be taken by a better card already tabled.

A *sequence* is a succession of cards in the same suite; as ace, king, queen, knave.

Tenace is possessing the first and third best cards, and being last player; you consequently conquer the adversary when that suite is played.

Scoring is the method of reckoning the points in a game. The reckoning is made by four counters, or pieces of money; and the way in which these pieces are disposed shows the score. The following is the ordinary method of scoring:—

1	2	3	4	5	6	7	8	9
				0	0	00	000	0
0	00	000	0000	00	000	0	0	0
								0

Rules for Playing.

If a person plays out of his proper turn, or shows a card, it is in the option of either of his adversaries to call that card; that is, cause him to lay it down at any time in that deal, provided it does not make him revoke; or either of the adversaries may require of the person who ought to have led, the suite the said adversary may choose.

If a person supposes he has won the trick, and leads again before his partner has played, the adversary may oblige his partner to win it if he can.

If a person leads, and his partner plays before his turn, the adversary's partner may do the same.

If the ace or any other card of a suite is led, and the last player should happen to play out of his turn, whether his partner has any of the suite led or not, he is neither entitled to trump it nor to win the trick, provided you do not make him revoke.

If a revoke happens to be made, the adversaries may add three to their score, or take three tricks from the revoking party, or take down three from their score; and if up, notwithstanding the penalty, they must remain at nine: the revoke takes place of any other score of the game.

If any person revokes, and discovers it before the cards are turned, the adversary may call the highest or lowest of the suite led, or call the card then played, at any time when it does not cause a revoke.

No revoke can be claimed till the trick is turned and quitted, or the party who revoked, or his partner, have played again.

If a revoke is claimed by any person, the adverse party are not to mix their cards, upon forfeiture of the revoke.

No person can claim a revoke after the cards are cut for a new deal.

If any person calls, except at the point of eight, the adversaries may call a new deal, if they think proper.

After the trump card is turned up, no person must remind his partner to call, on penalty of losing one point.

No honours in the preceding deal can be set up after the trump card is turned up, unless they were before claimed.

If any person calls at eight, and his partner answers, and the adverse party have both thrown down their cards, and it appears that the parties calling have not the honours, the adversaries are entitled, if they please, to compel the play to go on, or to have a new deal.

If any person answers without having an honour, the adversary may consult and stand the deal or not.

If any person calls at eight, after he has played, it is in the option of the adverse party to call a new deal.

If any person separates a card from the rest, the adverse party may call it, provided he names it, and proves the separation; but if he calls a wrong card, he or his partner are liable for once to have the highest or lowest card called in any suite led during that deal.

If any person, supposing the game lost, throws his cards upon the table with their faces upwards, he may not take them up again, and the adverse party may call any of the cards when they think proper, provided they do not make the party revoke.

If any person is sure of winning every trick in his hand, he may show his cards, but he is then liable to have them called.

If any person omits playing to a trick, and it appears that he has one card more than the rest, it is in the option of the adversary to have a new deal.

Each person, in playing, ought to lay his card before him; and if any of the adversaries mix their cards with his, his partner may demand each person to lay his card before him, but not to inquire who played any particular card.

Hints to Learners.

1. Lead from your strong suite (or that with which you could make the most tricks), and be cautious how you change suites.
2. Lead through an honour, when you have a good hand—that is, cause your adversary on the left to lay down a good honour—in order that it may be taken up if possible by your partner.
3. Lead through the strong suite of the left-hand adversary, and unto the weak of him who is on the right; but not in trumps, unless you are strong in them.
4. Lead a trump if you have four or five, or a strong hand; but not if weak.
5. Sequences are eligible leads, and begin with the highest.
6. Follow your partner's lead, but not your adversary's.
7. Do not lead from ace queen or ace knave.
8. Do not lead an ace unless you have the king.
9. Do not lead a thirteenth card unless trumps are out.
10. Do not trump a thirteenth card unless you are last player, or want the lead.
11. The third to play always to put on his best card.
12. When you are in doubt, win the trick.
13. When you lead small trumps, begin with the highest.
14. Do not trump out when your partner is likely to trump a suite.
15. Having only a few small trumps, make them when you can.
16. Make your tricks early, and be cautious how you finesse.
17. Never neglect to make the odd trick when in your power.
18. Never force your adversary with your best card, unless you have the next best.
19. If you have only one card of any suite, and but two or three small trumps, lead the single card.
20. Always endeavour to keep a commanding card to bring in your strong suite.
21. When your partner leads, endeavour to keep the command in his hand.
22. Always keep the card you turned up as long as you conveniently can.
23. If your antagonists are eight, and you have no honour, play your best trump.
24. Always take care to reckon and amend the score at conclusion of each deal; and do not speak or attempt to converse unless between the deals.

A *rubber*, or rub, generally consists of three games. The parties who have two out of the three win the rub. If the same party gain the first and the second game, that concludes the rub, without playing the third.

A rubber also consists of five *points*. If a party wins the game before the adversary has scored five, he is said to have won a *double*, or two points. Two games won in this manner count four points, and consequently concludes the rubber, for which one point is also reckoned. When an adversary has scored five or more at the termination of the game, you have won only a *single*, which counts but as one point.

Whist is sometimes played by three persons, the fourth place being termed *dumby*. The cards for dumby are exposed on the table, and played by one who undertakes to act as dumby's partner throughout. This method of playing very much destroys the interest of the game, and is never resorted to but in cases of necessity, when four persons cannot be had.

CRIBBAGE.

This game is played with the whole pack of cards, and by two, three, or four persons, as the case may be. When there are three, they play as individuals; when four, two play as partners, as in the case of whist. The value of the cards in cribbage is the same as in whist; but there are no trumps, excepting the knave of the suite turned up. There are different modes of playing, according to the number of cards dealt; the number is generally five or six. The game consists of sixty-one points, and to keep score or reckoning, an apparatus called a cribbage-board is employed. This board possesses holes for the scoring of each party, and the scoring is effected by means of pegs. The party who is able to bring his peg into the last hole first wins the game.

The following is an explanation of terms generally used in the game:—

Crib, the cards laid out by each party; and whatever points are made by them, the dealer scores.

Pairs are two similar cards, as two aces or two kings. They reckon for two points, whether in hand or playing.

Pairs royal are three similar cards, and reckon for six points, whether in hand or playing.

Double pairs royal are four similar cards, and reckon for twelve points, whether in hand or playing. The points gained by pairs, pairs royal, and double pairs royal, in playing, are thus effected: your adversary having played a seven, and you another, constitutes a pair, and entitles you to score two points; your antagonist then playing a third seven, makes a pair royal, and he marks six; and your playing a fourth is a double pair royal, and entitles you to twelve points.

Fifteens.—Every fifteen reckons for two points, whether in hand or playing. In hand, they are formed either by two cards, such as a five and any tenth card, a six and a nine, a seven and an eight; or by three cards, as a two, a five, and an eight, &c. And in playing thus, if such cards are played as make together fifteen, the two points are to be scored towards the game.

Sequences are three or four, or more successive cards, and reckon for an equal number of points, either in hand or playing. In playing a sequence, it is of no consequence which card is thrown down first, as thus: your adversary playing an ace, you a five, he a three, you a two, then he a four, he counts five for the sequence.

Flush is when the cards are all of one suite, and reckons for as many points as cards. For a flush in the crib, the card turned up must be of the same suite as those in hand.

The go is gained by the player when no other number can be played under thirty-one, in which case he takes one; but if the number makes thirty-one, he takes two. The turn-up card accounts in with both hand and crib.

Regulations for Playing.

1. In dealing, the dealer may discover his own cards, if he pleases, but not those of his adversary. If he does, that adversary is entitled to mark two points, and call a fresh deal, if he pleases.
2. If the dealer gives his adversary too many cards, the adversary may score two points, and also demand another deal, provided he detects the error previous to his taking up his cards.
3. When any player is observed to have in his hand more than the proper number of cards, in that case the person who discovers it may mark four points to his game, and call a new deal, if he thinks proper.
4. If the dealer gives himself more cards than he is entitled to, the adversary may score two points to his game, and call a fresh deal, if he thinks proper: if he does not, he is entitled to draw the extra cards from the dealer's hands. If the non-dealer observes his adversary has more cards than are his due, after they are taken off the table, he may score four points to his game, and call a new deal.
5. If either party meddle with the cards from the time they are dealt until they are cut for the turn-up card, his adversary is entitled to score two points.
6. If any player scores more than he is entitled to, the other party has a right not only to put him back as many points as were so scored, but also to score the same number to his own game.
7. If either party touches even his own pegs unnecessarily, the adversary may score two points to his game.
8. If either party take out his front peg, he must place the same behind the other.
9. Either party scoring a less number of points than are his due, incurs no penalty.
10. Each player has a right to pack his own cards; and should he place them on the pack and omit scoring for them, whether hand or crib, he must not mark for them afterwards.

FIVE-CARD CRIBBAGE.

Proper cribbage is played with five cards, and we shall give a description of it in reference to two persons.

After the dealer has been determined by cutting, as in whist, they are dealt one alternately, to the extent of five for each individual. The elder hand takes three points on the board. Each player then proceeds to lay out two of the five cards for the crib, which always belong to the dealer. In doing this, always recollect whose crib it is, as the cards which may advantage your own are almost invariably prejudicial to your game when given to your adversary. This done, the non-dealer cuts the remainder of the pack, and the dealer turns up the uppermost. This card, whatever it may be, is reckoned by each party in hand or crib. When it happens to be a knave, the dealer scores two points to his game.

After laying out and cutting as above-mentioned, the eldest hand plays any card, which the other endeavours to pair, or to find one, the points of which, reckoned with the first, will make fifteen; then the non-dealer plays another card, trying to make a pair, or pair royal, and so on alternately till the points of the cards played make thirty-one, or the nearest possible number under that.

When the party whose turn it may be to play cannot produce a card that will make thirty-one, or come in under that number, he then says 'go' to his antagonist, who thereupon is to play any card he has that will come in to make thirty-one, if he can, and take two points, or to score one for the end hole; and besides, the last player has often opportunities to take pairs or sequences. Such cards as remain after this are not to be played; but each party having, during the play, scored his points gained, in the manner as hereafter directed, proceeds, the non-dealer first, then the dealer, to count and take for his hand and crib as follows, reckoning the cards every way they possibly can be varied, and always including the turned-up card:—

For every fifteen, two points; for every pair, or two of a sort, two points; for every pair royal, or three of a sort, six points; for every double pair royal, or four of a sort, twelve points; for every sequence of any sort, according to the number; for every flush, according to the number; for every knave or noddy of the same suite as was turned up, one point; but when turned up it is not to be reckoned again, nor is anything to be taken for it when played.

Three cards of the same suite in hand entitle the holder to reckon that number, and five for the crib when the turned-up card happens to be of the same suite.

It is always highly necessary, in laying out cards for the crib, that every player should consider not only his own hand, but also whom the crib belongs to, and what is the state of the game; because what might be proper in one situation would be extremely imprudent in another.

If you should happen to possess a pair royal, be sure to lay out the other two cards for either your own or your adversary's crib, except you hold two fives with the pair royal; in that case it would be extremely injudicious to lay them out for your adversary's crib, unless the cards you retain insure your game, or your adversary being so near home that the crib becomes of no importance.

It is generally right to flush your cards in hand whenever you can, as it may assist your own crib or baulk your opponent's.

Endeavour always to retain a sequence in your hand, and particularly if it is a flush.

Always lay out close cards, such as a three and four, a five and six, for your own crib, unless it breaks your hand.

As there is one card more to count in the crib at five-card cribbage than there is in hand, be sure to pay great attention to the crib, as the chance of reckoning more points for the crib than are in hand is five to four.

For your own crib, always lay out two cards of the same suite, in preference to two of different suites, as this will give you the chance of a flush in the crib.

Never lay out cards of the same suite for your adversary's crib.

Endeavour always to baulk your opponent's crib. The best cards for this purpose are a king and an ace, a six, a seven, an eight, a nine, or a ten; or a queen with an ace, a six, a seven, an eight, or a nine; or any cards not likely to form a sequence.

A king is generally esteemed the greater baulk; as, from its being the highest card in the pack, no higher one can come in to form a sequence.

Never lay out a knave for your adversary's crib, when you can possibly avoid it, as it is only three to one but the card turned up is of the same suite, by which he will obtain a point.

Even though you should hold a pair royal, never lay out for your adversary's crib a two and three, a five and six, a seven and eight, or a five and any tenth card. Whenever you hold such cards, observe the state of your game, and, particularly if it is nearly ended, whether your adversary is nearly out, or within a moderate show, and it is your deal. When this is the case, you must retain such cards as will, in playing, prevent your adversary from making pairs or sequences, &c. and enable you to win the end-hole, which will often prevent your opponent from winning the game.

THREE AND FOUR HAND CRIBBAGE.

Three and *four* hand cribbage differs only from two hand in as far as the parties only put out *one* card each to the crib; and when thirty-one, or as nearly as can be, have been made, then the next eldest hand leads, and the players go on again, in rotation, with any remaining cards, till all are played out, before they proceed to show their hands and crib.

In three-hand cribbage, a triangular board is used, with three lines of holes to allow of each scoring his own game.

SIX-CARD CRIBBAGE.

Six-card cribbage bears so great a resemblance to five-card, that any one playing the one well must play the other equally so. It consists of pairs, fifteens, sequences, flushes, &c.; and the points are reckoned and marked precisely in the same manner: all the cards must be played out; that is, when either party has made the end hole, the remaining cards in hand must be played, scoring for the pairs or fifteens they may form. When last player, you should endeavour to retain close cards in hand, as they may enable you to acquire four points in playing.

The dealer is supposed to have some trifling advantage.

The dealer is entitled to expect twenty-five points by his hand, crib, and next hand. Thus at his second deal, if his peg is in the twenty-fifth hole of the board, he has his complement of points; the same at his third deal, if he is within eleven points of the game.

If the non-dealer by his first hand attain the eleventh hole in the board, he will have the best of the game; for he is entitled to expect that he shall make his second deal with his front peg in the thirty-sixth hole, and by which he will probably win the game by his hand, crib, and next hand.

If you are dealer, and your adversary has above his complement of points, you must play your game accordingly. Thus, if you have good cards, try to make as many points as possible by pairing, fifteens, &c. On the contrary, if your cards are indifferent, you must play off, to prevent your adversary from obtaining points.

ALL-FOURS.

This is a game at cards played by two, three, or four persons, with a complete pack of cards. If four, there are two parties, two in each. We shall suppose only two individuals are playing:—

After the cards have been dealt by three at a time, six to each, the dealer turns up the next card as the trump. If your adversary be not satisfied with his hand, he says, 'I beg.' In this case, if you do not

wish to run the risk of changing the trump, you say, 'I give you one,' and you allow him to score one towards his game. If your own hand be bad, you then deal out three more cards to each, and turn up another trump, which supersedes the former. The adversary may propose to take the chance of dealing three more cards to each, but this can be refused by the dealer, without any forfeiture.

The cards are then played, the elder hand leading, and the party taking up the tricks which he wins. You must either follow suite or trump, if you can.

Ten points make the game, and they are produced by *high*, which is the highest trump dealt; *low*, or the lowest trump dealt; *jack*, or knave of trumps; and *game*, the number of pips on the counting cards. The counting cards are as follows:—ace, four; king, three; queen, two; knave, one; and the ten, which reckons ten. This counting applies to all suites. If the jack be in your hand, secure it as quickly as possible; as, for instance, do not lose an opportunity of trumping with it; for if it fall into the adversary's hand, he reckons it to his game.

Should the card turned up be a knave, the dealer scores one point to his game. Knave of trumps in hand does not reckon, unless you make a trick with it; for if your adversary takes it with the ace, king, or queen, he scores it.

SPECULATION.

This is a round game at cards, the term *round* meaning that it can be played by a large party round a table. The number most suitable is from seven to thirteen.

The principle of the game is this: A *pool* is formed by the dealer putting two counters, and every other player putting one counter, into a dish or treasury in the middle of the table; and this store is paid to the person who holds the highest trump. Thus it is the object of every person to get the highest trump, and the effort to do so is the *speculation*.

After being duly shuffled and cut, and the dealer determined, he deals three cards to each person, one at a time. These cards must be placed before each person, and no one is allowed to look at them until after the trump is turned. Having finished the deal, the next card determines the trump; this card may be *sold* either before or after being seen. When this speculation is concluded, by some person *purchasing* it with counters, or the dealer retaining it, if he thinks proper, the eldest hand turns his uppermost card, and if this be a superior trump to the one turned, he may also speculate. Each player does the same, till all the cards have been exposed, when the pool is given to the possessor of the highest trump.

LOO.

Loo is a game played by five or six people; and a pool is made by the dealer putting in five counters. He then deals five cards to each person, and turns up a trump. Whatever suite the trump may be, the knave of clubs, called *pam*, forms the chief. Those who are dissatisfied with their hands can throw up their cards, and demand fresh ones from the pack.

When the ace of trumps is played, it is usual to say, 'Pam, be civil;' the holder of pam is then expected to let the ace pass.

When any person holds a flush of trumps with pam, this individual can sweep the pool before playing. Then there is a new deal.

The next best hand to the above is trumps only, and this sweeps the pool, if there be not a pam flush; and there is also a new deal.

The next best hand is that of a flush of other suites, which sweeps the pool; and there is also a new deal.

When any of these flushes occur, each person, excepting those who hold inferior flushes or pam, is *looed*, and has to pay five counters into the pool.

When none of these flushes occur, and those who wished have changed their cards, the game goes on as at whist, the highest card taking the trick.

When all the cards are played out, they will make but five tricks; and all the counters in the pool are divided between the holders of these tricks, every other person being looed, and obliged to pay five counters to the pool for next deal.

DANCING.

Dancing, as one of the most healthful and elegant in-door amusements, cannot be too highly recommended. Among a rude or dissolute people, it may degenerate into something worthy of condemnation; but all the blessings of Providence are similarly liable to abuse, and it would be most unjust to condemn a cheerful domestic amusement, merely because it has at times been degraded to immoral purposes. By all physicians, dancing, when pursued in moderation, is recommended as highly conducive to health; and it may be truly said that, allied with music, nothing is more calculated to purge the mind of melancholy, and put the whole temper into good-humour.

Dancing is the poetry of motion. It must be performed with ease and grace, and always with a perfect regard for propriety of movement. As an art, it is taught by professed masters; and one of the leading rules given to the learner is to raise and lower himself gracefully on the elastic part of his feet—that is, the toes; never to leap or come down on the whole sole or heels; also to keep exact time to the music. Dancing is therefore a simple and elegant gliding on the toes, these bending more or less to accommodate the steps, and to prevent everything like harshness of motion. The body should not be held stiffly, and the hands ought to hang down easily by the sides.

Dancing takes the form of several distinct kinds or series of movements, some quick and some slow, and some more complex than others. The most popular of the old-established dances are termed

Country Dances.

This class of dances takes its name from the French word *contre* (against), from being danced by two parties standing in a row opposite or against each other. The general principle is for each couple in succession to go down the middle of the rows and up again, with some other movements, till all have danced down and into their original places. It is a rule for the top couple to dance down twice, thus leaving the couple that was the second to be at the top. This finishes the dance. If the party wish to dance another dance, the second couple, now at the top, begins, and so on. Thus each couple in the party has the opportunity of choosing any particular dance or tune they may wish. The choice is left to the lady. In general, a party in a country dance do not remain up for more than two dances, when the partners are changed, and new dances begin.

A country dance should not consist of more than twelve or fourteen couples, as it is fatiguing to dance with a greater number. In standing up, the lady should always be on the gentleman's right hand, if they turn their faces to the top of the room. This is a simple rule to determine on which side the ladies and gentlemen should respectively take their places.

The principal figures in country dances are,

1. *Hands across*; that is, the top lady takes the second gentleman by the right hand, and the top gentleman, at the same time, takes the second lady by the right hand, and all go a half-circle round; then all change hands and back again.

2. *Hands four round*; the two top couples join hands, forming a circle; dance half round and back again.

3. *Right and Left.*—In this the top lady gives her right hand to her partner, changing places with him; then her left hand to the person below her, changing places; her partner performs a similar movement, and both return to their places.

4. *Set and change Sides.*—The lady takes hold of both hands of the lady below her, and sets—that is, dances for a short time without changing her situation; then

both ladies pass to the gentlemen's side, while the gentlemen pass at their backs to the ladies' side; all again set, and return to their places.

5. *Pousette.*—This signifies that the two top couples respectively join hands, each couple dancing round the other.

6. *Down the Middle.*—The top couple go down hand in hand and return, stopping one couple lower than they commenced.

7. *Casting off* is the lady going down behind the ladies, and the gentleman behind the gentlemen, and returning to their places.

There are English, Irish, and Scotch country dances; but we know of no distinction among them except the tunes. All vary less or more in their figures. In each, however, as already observed, the plan is followed of the first or top couple dancing with each following couple in succession to the bottom of the room; and as soon as a sufficient number of couples are disengaged at top, another couple commences, and so on through the whole party. The following is an outline of the figures in a few of the more popular country dances. It will be understood that we always refer to what each couple does in succession:—

Voulez vous Dancer, Mademoiselle.—Set and change sides, down the middle, up again, and pousette.

John of Paris.—Right and left, down the middle, up again, and pousette.

Captain Fleming.—Hands across, down the middle, up again, and hands four round.

The Honeymoon.—Hands three round on the ladies' side, then on the gentlemen's side, down the middle, up again, pousette, right and left.

The Triumph.—Down the middle and up again; then the lady down with the next gentleman; her partner follows: the two gentlemen now lead the lady up between them, taking hold of her hands by one hand, and joining their other hands over her head; pousette.

Petronella.—First couple move to the right into the middle, and set; to the right again, and set at the side; to the right again, and set in the middle; to the right again to places; down the middle, up again, and pousette.

Caper Fey.—Top couple go down backs and up again; down the middle and up again; set, and turn corners, and reel on the sides.

The Legacy.—Hands three round on the ladies' side; then on the gentlemen's side; down the middle and up again; set in the middle, and turn with both hands.

Sir Roger de Coverley, or the *Haymakers.*—Top lady and the bottom gentleman advance to the centre of the dance, turn with both hands, and back to their places; the first gentleman and bottom lady do the same; the top lady and bottom gentleman again advance, turn with the right hand, and back to places; then the top gentleman and bottom lady do the same; top lady and bottom gentleman advance and turn with left hand, and back to places; the top gentleman and bottom lady do the same. The top lady and bottom gentleman advance, the gentleman bows and the lady curtsies; the top gentleman and bottom lady do the same. The top lady and bottom gentleman advance, and pass back to back; top gentleman and bottom lady do the same. The top couple turn, the lady to the right and the gentleman to the left; all the ladies following the lady, and all the gentlemen following the gentleman to the bottom of the room, where they meet their partners and lead up the centre of the room. The top couple then half pousette with each couple, till they reach the bottom of the dance.

Scotch Reels.

These are rapid and rather fatiguing, but not ungraceful dances. They are danced by three, four, five, or six persons; but four is best, and most common. The foursome reel is danced very much according to fancy; the two couples commencing by placing themselves opposite each other, or in a line, with the two ladies in the middle, back to back. In whichever way the dance begins, the plan is for each person to perform the figure of eight by winding round the others, and setting to partners alternately. The music of course guides the time for the setting and the moving.

Highlanders dance reels with great agility, and are fond of introducing the steps ordinarily called the *Highland Fling*, which is of the character of dancing on each foot alternately, and flinging the other in front and behind the leg which is dancing.

Quadrilles.

These are modern dances of French origin, comparatively tranquil in character, and very suitable for small domestic parties. They are danced by four couples, or eight persons, a couple standing on each side of a square. The lady is always on the gentleman's right.

There are many sets of quadrilles, the figures in each varying from the others; but in by far the greater number of instances one set is adhered to, which is termed Payne's first set. This set, of which we present an outline, consists of four figures, and a finale. The couples at top and bottom first perform a figure; then it is performed by the others; and so on.

La Pantalon.—First right and left, set and turn partners; ladies' chain, which is performed by the two ladies giving their right hands to each other, and changing places; then their left hands to the gentlemen, and turn round; and the same back again to places. Now promenade (each couple holding hands crossed) to the opposite side; then half right and left back to places.

L'Ete.—The first lady and opposite gentleman advance and retire, dance to the right, then to the left, cross over, lady and gentleman changing places. Dance to the right and left, cross again to their own places, and turn their partners. The second lady and first gentleman do the same.

La Poule.—The first lady and opposite gentleman cross over, giving their right hands; back again, giving their left and then right to their partners, and set, forming a line; promenade to opposite places. The two who began advance and retire; advance a second time; the lady curtsies and the gentleman bows, and return. The two couples advance and retire; half right and left to their original places.

La Trenise.—Ladies' chain; set and turn partners; first couple advance and retire; advance again; the gentleman returns, leaving the lady on the left of the opposite gentleman; the two ladies pass or cross to the opposite side, changing to opposite corners, during which the gentleman passes between them, and sets. The ladies cross over again, and pass to opposite corners, while the gentleman returns to his place, and sets. The first couple set and turn. During these performances, the gentleman at the bottom of the dance stands still. The movement being finished, a similar figure is performed by himself and partner.

La Finale.—All eight dance or chassé across, changing places with their partners, and set at the corners; back again to places, and set. After this, *L'Ete* is danced, concluding with chassé across.

This finale is danced in another way. All eight promenade round the room to their own places. The first and second couple advance and retire; advance again, the gentlemen taking the opposite ladies, or exchanging partners. Ladies' chain; advance and retire; advance again, reclaiming partners, and promenade. This is called the *gallopade* finale.

The preceding embraces nearly all dances usually performed in private parties and balls of an ordinary kind. In the higher class of assemblies, various foreign dances are introduced, such as waltzes, mazourkas, pas seuls, minuets, and gallopades; but of these it is unnecessary to offer any description, as they require careful training under a master. Latterly, a new dance, called the *Polka*, has been introduced; it appears to be a combination of a waltz and an Irish jig, and we should think will never become popular, however fashionable it may be considered.

ARCHÆOLOGY.

The term *Archæology*, though sufficiently definite and comprehensive in its original meaning, was confined, until a comparatively recent period, to the study of Greek and Roman art. The word, however, literally signifies the description of ancient things, and it has now been universally adopted in its largest sense to give name to the science which deduces history from the relics of the past.

The recent adoption of this term to characterise the pursuits of the antiquary marks a new era in the study of antiquities, in which it has been reduced to an intelligible and comprehensive system based on philosophic induction. By this it has been at the same time elevated to its proper rank as a science, and rendered generally acceptable as a popular branch of study. Archæology, however, is no newly-discovered science. It has its origin in the natural cravings of the human mind to master the secrets of the mysterious past, no less than of the mysterious future: it forms an essential branch of the historian's studies: it enters largely into the inquiries of the ethnologist, or investigator of the various races of the human family; and into those of the philologist, or analyser of their numerous languages. We accordingly find evident traces of an archæological spirit in the literature of every civilised nation; and generally it exhibits the strongest symptoms of development during periods most marked by rapid progress in the arts of civilisation. It manifested itself at the revival of letters in the sixteenth century, by a return to classic models. Its present tendency throughout Europe seems to be, if not to a total abandonment of these models, at least to a preference for mediæval art, and a desire to carry out its ideas to a more perfect development.

The history of archæology bears a very near resemblance to that of its elder sister-science, geology, to which, indeed, it has in many respects a close analogy. They are like two successive series of links in the same chain of reasoning, the earliest data of the archæologist being found exactly where those of the geologist end—in the debateable land of the later alluvial formations. An intelligent geologist, in describing a recent visit to the Newcastle Museum, thus clearly recognises the labours of the archæologist as applying to the human era the same inductive speculations which his own science treats of in relation to a still earlier state of things:—'As I passed in the geological apartment from the older Silurian to the newer Tertiary, and then on from the newer Tertiary to the votive tablets, sacrificial altars, and sepulchral memorials of the Anglo-Roman gallery, I could not help regarding them as all belonging to one department. The antiquities piece on in natural sequence to the geology; and it seems but rational to indulge in the same sort of reasonings regarding them. They are the fossils of an extinct order of things newer than the Tertiary: of an extinct race—of an extinct religion—of a state of society and a class of enterprises which the world saw once, but which it will never see again. And with but little assistance from the direct testimony of history, one has to grope one's way along this comparatively modern formation, guided chiefly, as in the more ancient deposits, by the clue of circumstantial evidence.'

Such is the rank among the inductive sciences which is at length being justly conceded to the pursuits of the archæologist. Like the geologist, he deals with records of a period prior to written annals, and traces out the history of ages heretofore believed to be irrecoverable. He deals, it is true, with a recent period, when contrasted with geological eras: but from this he derives the strongest claim to general interest in his pursuits. Intelligent thinkers are shaking themselves free from the narrow views which induced them to investigate with untiring zeal the natural history of a mammoth or a plesiosaurus, and yet allowed them to despise the equally accessible evidence from whence we may recover the history of our own race. While, however, the rude burial mounds, or the chance revelations of the later alluvial deposits, disclose to us traces of uncivilised tribes to whom we must assign a very remote date, the speculations of the archæologist, as well as the earliest investigations of the historian, into the records of nations, find their first unquestionable data among the monuments of Egyptian civilisation.

EGYPTIAN ANTIQUITIES.

The ancient monuments of Egypt arrest attention and impress the mind no less by their intrinsic excellence as the creations of human genius, than by the remote antiquity with which they are associated. We dwell with interest on British monuments of the twelfth and thirteenth centuries, and look beyond that date as into a remote and comparatively unknown era, the memorials of which are mostly crumbled into dust. But on turning to the pyramids, temples, and tombs of Egypt, we look upon the monuments of a people whose civilisation is anterior to the eldest-written records, and whose edifices preserve to us memorials contemporary with the patriarchal age, when the fathers of the Hebrew monarchy dwelt in tents, or groaned under the hard bondage of Egyptian taskmasters.

It may naturally excite surprise that the remotest evidences of civilisation should be discovered on the African continent. All writers, however, who have investigated the subject, agree in assigning an Asiatic origin to the ancient Egyptians. Their features, their language, and many of their peculiarities, clearly point to this. The formation of the skulls of mummies found in the catacombs no less distinctly exhibit the characteristics of the Caucasian variety, which so remarkably contrasts with all the cranial developments of the true African race. We are left to conjecture in assigning that remote period during the infancy of nations, when the first Asiatic colony settled on the banks of the Nile. It suffices, however, for our present purpose to know that, from the ascertained dates of its early history, there can be no doubt Egypt was one of the first countries brought under a fixed social and political system, and where an associated community successfully pursued the arts of civilisation.

The date assigned as the epoch of Menes, or Men, the earliest Egyptian ruler of whom any trustworthy notice has descended to modern times, is about 2000 years B.C.; an era nearly corresponding with the time fixed by Biblical chronologists for the foundation of the kingdom of Assyria by Nimrod, and with the commonly-received commencement of the historic chronology of the Chinese empire. With the solitary exception of the very slight notices recorded in the first eleven chapters of the book of Genesis, all attempts to retrace the records of our race beyond this period have hitherto been based on mere conjecture, unsupported by evidence, although, according to the received chronology of Biblical critics, a period of fully 2000 years intervenes between the era of Menes, the founder of the Egyptian monarchy, and the origin of the human race. Between these two important dates, however, we learn from the Sacred Writings of the destruction of the ancient world by the Deluge, and the recommencement of the human race from one family, according to the accepted chronology, 2348 years B.C.; and about a century later, of the dispersion of the builders of Babel on the plain of Shinar, and the subdivision of the human family into distinct and rival communities. Within

less than two centuries and a-half after this latter event the history of Egypt commences, as a community possessed of political institutions and social arts.

The researches of modern archæologists have done much to free the early history of Egypt from the fables and inconsistent traditions derived chiefly from the narrations of the priests, and preserved in the writings of Herodotus, Manetho, and others. These placed the era of Menes several thousand years farther back, and furnished a list of intervening kings and dynasties whose history bears the usual mythic characteristics of the traditions of infant nations. Modern research has corrected rather than rejected these historic traditions. It is now thought probable that several, if not the whole, of Manetho's dynasties, which seemed to give countenance to the remote era assigned by the priests to the reign of Menes, were not successive, but contemporaneous, the Valley of the Nile having then been divided into various independent kingdoms. By the labours of Champollion, Wilkinson, and other modern students of Egyptian archæology, aided by recent fortunate discoveries, hereafter referred to, something like a satisfactory chronological series of the kings of Egypt from the time of Menes has been made out. The study, however, is still in its infancy. It dates its commencement within the present century; and its progress has not been accelerated by the excessive zeal of M. Champollion, the professor of Egyptian antiquities in the College of France, who, either from a too sanguine fancy, or from even less creditable causes, announced the discovery of more than any one else has been able to substantiate from the data on which his disclosures are founded. (See No. 55.)

The characteristics of the great Valley of the Nile at once account for its early occupation by the human race, and its becoming the seat of one of the first kingdoms which grew out of the natural tendency of man towards social union. The Valley of the Nile includes, along with the Delta, an area of about 17,000 square miles of cultivable land. The climate during the greater part of the year is salubrious. The annual overflowing of the Nile reduces agricultural operations to little more than the sowing of the seed in spring, and the reaping of the abundant harvest which it yields in an early autumn. While the country is so isolated as to be protected by natural barriers from the ready encroachments of hostile armies, it is most advantageously situated for commercial intercourse with other nations. Hence it is that, after repeated conquests, and under the most tyrannical and oppressive forms of government, Egypt has never become extinct like the great empires of Asia. With some slight amelioration of the suicidal exactions of despotic rulers, it has again and again given evidence of renewed vitality; and holding as it does the real key to the commerce of the East, the indirect and partial command of which was the source of all the greatness of Venice and the Italian republics of the fourteenth century, it can hardly be doubted that Egypt only needs the advantages of social civilisation and free institutions, to resume her ancient place among the empires of the world.

Pyramids.

The Pyramids of Egypt, which have attracted the curious traveller for ages, are already so familiar by numerous descriptions and views, that it is hardly necessary, in an epitome like this, to do more than name them, and refer to their gigantic proportions. The two largest of the pyramids of Jizeh are the most stupendous masses of building that human labour has ever accomplished. According to the information communicated to Herodotus by the priests of Memphis, the largest of these was built by Cheops, whom Wilkinson conceives to have been the Suphis of Manetho. Like too many of the evidences of human power and skill, the Great Pyramid remains a monument of tyranny and oppression: 100,000 men were employed during twenty years in its construction; and the great historian was informed that its founder was interred in a vault beneath the bottom of the pyramid. Some intelligible idea of this vast structure will be conveyed by describing its base as occupying an area almost exactly corresponding to that of Lincoln's-Inn Fields, London, measured to the houses and to the wall of Lincoln's-Inn Garden, while its summit towers to an altitude of 119 feet above the Cross of St Paul's. 'The oldest monuments of Egypt,' says Wilkinson, 'and probably of the world, are the pyramids to the north of Memphis; but the absence of hieroglyphics and of every trace of sculpture, precludes the possibility of ascertaining the exact period of their erection, or the names of their founders. From all that can be collected on this head, it appears that Suphis and his brother Sensuphis erected them about the year 2120 B.C.' The probable uses for which these vast structures were designed have been the subject of much discussion, and repeated attempts have been made to prove their construction for astronomical purposes. The fact, however, of their being found only to contain sarcophagi and their mouldering contents, with the collection alongside of the largest pyramids, of many of small dimensions, and the whole grouping along with catacombs, notoriously constructed as places of sepulture, seem to point them out as the tombs of royal founders. This is still further confirmed by the great care with which the passages to the sepulchral chambers have invariably been found closed up and concealed, so that even now the majority of them appear never to have been entered. (See vignette to No. 55.)

There are numerous pyramids of various sizes in Nubia. The Temple of Belus (the Birs Nimroud of the Arabs) and the Mujelibè at Babylon, were both pyramidal buildings of large dimensions, chiefly constructed of brick, and of which there are still very extensive remains. India, in like manner, furnishes examples of pyramidal buildings still standing in the neighbourhood of Benares. But next to the Great Pyramid of Jizeh, those of Mexico are most calculated to excite attention. Like those of Babylon, the Mexican pyramids are chiefly constructed of bricks. The Great Pyramid of Cholula in Mexico covers an area more than three times the base of the Great Pyramid of Jizeh; but it is built in the usual form of the Mexican pyramids, consisting of four receding platforms, each of which is subdivided into a number of small steps, and the top is left as a large open platform, so that the height of the whole is small when compared with the base. These were designed by the ancient Mexicans as pedestals for the statues of their gods. When Cortez first beheld them, a colossal stone statue occupied the summit of each, covered with plates of gold; but the Spaniards stripped them of their costly coverings, and broke them in pieces. Since then, the lofty terrace of the Great Pyramid of Cholula has been chosen as the site of a church, dedicated to the Lady de los Remedios, in which mass is daily celebrated by a priest of the Indian race, whose ancestors practised there the rites of their idolatrous worship, and sacrificed human victims on the altars of their gods.

Architecture.

Previous to the present century, the Pyramids almost invariably attracted the greatest share of attention from those who treated of Egyptian antiquities. The vast and imposing masses of architecture which still remain the chief monuments of Egyptian art, can hardly be said to have received any notice deserving the name of study till the close of last century, when a conquering invader from the 'far west' led the Gothic races of Europe for the first time to the possession of the ancient cradle-land of civilisation, and incited them to victory by the traditional fame of twenty centuries. Since the French invasion, some of the ablest scholars of Europe have devoted themselves assiduously to the study of Egyptian antiquities; and architects have striven to reduce the style of its ancient builders to a system. By such means, the genius of this won-

derful people has only become more fully apparent. Little more had been previously known of Egyptian architecture, except what could be learned from imperfect ideas of the dimensions of the Pyramids, and some general notion of the enormous masses and colossal grandeur of the temples and monolithic monuments. They were generally esteemed solely as the rude evidences of barbaric pomp and power. More careful study has not diminished the wonder with which we regard the gigantic edifices of Thebes or Denderah, and the vastness and solidity of their materials and mode of construction, which seem to bid defiance to time. But in addition to these, Egyptian architecture is now known to be characterised by great elegance in the combinations of its forms; and while in its general features it betrays the probable suggestive source of the Doric temples of Greece, it equally claims comparison with the Gothic styles of mediæval Europe, in the endless variety of its details, and in what may be styled the systematic lawlessness of its proportions. The details of Greek and Roman architecture are reducible to well-defined relative proportions, and their styles admit of variations only by the changing combinations of a few fixed elements. The architects of Egypt, on the contrary, like those of Gothic Europe, created a style wherein powerful and legitimate architectural effects were produced, without its being possible to reduce their plastic elements to any kind of system based on the forms or proportions of any class of features. [For illustrations of Egyptian Architecture, see No. 29, Vol. I.]

One or two attempts have been made to introduce the Egyptian style of architecture into this country, but they have resulted, as was to be anticipated, in utter failures. The vast temples of the Pharaohs, constructed for the worship of ancient Egypt, and adapted to the climate and local peculiarities of the country of their birth, become ridiculous caricatures when reproduced in brick and plaster in the busy thoroughfares of London. The introduction, moreover, of large windows, separate floors, and even shop fronts, with the attendant requisites of modern social habits, make sad havoc with the principles of genuine Egyptian architecture, so that any one who derives his ideas of it from the Egyptian Hall, jammed into the row of brick tenements and smoky chimneys of Piccadilly, will arrive at very unsatisfactory conclusions. The style has been revived with better success in the catacombs of some of our great public cemeteries. But after all, its true use and value is as the record of a race, a faith, and a state of religion, extinct beyond the possibility of revival ages ago. The most enthusiastic antiquary can look with little satisfaction on the imperfect adaptation of the obsolete symbols of a forgotten creed to give expression to the sublime anticipations of the Christian faith.

Hieroglyphics.

By far the most interesting branch of Egyptian antiquities is the hieroglyphics, which a chance discovery of modern times has done more to elucidate than all the unaided labours of the archæologist could ever have effected. From the earliest times, these mysterious symbols have excited an interest fully equal to their value as historic records. The Greeks and Romans, partly from national pride, but still more perhaps from a want of that philological talent peculiar to modern times, appear to have paid little attention to the languages of the *barbarians* with whom they were brought in contact. They made up, however, for their ignorance of Egyptian records by the most comprehensive assertions, on the faith of which it has been believed, almost to our own day, that Egypt was the parent of all the arts and sciences; that the hieroglyphic inscriptions on the public monuments contain a summary of the most important mysteries of nature, and the rudiments of all the knowledge we derive from classic literature. The interpretation of the hieroglyphics formed, it was believed, one of the most sacred mysteries of the priesthood, which was either purposely concealed, or had already been lost, when the Romans established themselves in Egypt. Since then, though ponderous folios had been written on the subject, some of them professing to explain the whole mystery, nothing was really known of hieroglyphic writing till the invasion of Egypt by Napoleon—if we except the explanation of the *Tau*, or handled cross, the symbol of life, the traditional interpretation of which had strangely survived the oblivion of all else.

In digging the foundations of Fort St Julien, near Rosetta, at one of the mouths of the Nile, the French discovered an inscribed block of black basalt, which, along with the other antiquities secured by the army of Napoleon in Egypt, was brought home to England, and is now familiarly known as the Rosetta Stone. This valuable relic, which forms one of the most interesting features of the Egyptian collection in the British Museum, contains an inscription in three distinct characters—the *Hieroglyphic*, or sacred; the *Enchorial*, or common Egyptian; and the *Greek*. From the terms of the latter, it became immediately apparent that the three inscriptions were versions of the same decree, in the several characters; and this was further confirmed by observing that the hieroglyphic inscription ended with the numerals I. II. and III., where the Greek has 'The first and the second . . . .' the remainder being broken away. A key seemed to be at length found to the long-hidden mysteries of Egyptian hieroglyphics, which had mocked the curious gaze of ages with the vain offer of unrevealed secrets. An accurate fac-simile of the three inscriptions was engraved, and extensively circulated by the Society of Antiquaries. The Greek text was translated and discussed by Porson and Heyne, the most eminent among the Greek scholars of Germany and England. But there explanation paused; and it seemed as if, after all the high anticipations excited by this discovery, it was to prove altogether fruitless. The causes of this are easily explained. Unfortunately, a considerable part of the hieroglyphic inscription was entirely wanting. The beginning of the enchorial and the conclusion of the Greek inscriptions were in like manner defaced; so that precise points of coincidence were wanting from whence to set out in deciphering the unknown by the known characters. Dr Thomas Young was the first to master any of the unknown hieroglyphics. With great sagacity, he noted the recurrence of certain words, such as Alexander, Ptolemy, &c.; and in corresponding parts both of the enchorial and hieroglyphic inscriptions, he soon detected corresponding groups of characters, and established the important fact, that these proper names are distinguished by the enclosing oval or royal *cartouche*, of such frequent occurrence on all Egyptian monuments. This discovery, however, sufficed to prove that the Greek is not a literal translation of the Egyptian. The names do not invariably recur in corresponding places of the several inscriptions, synonymes or pronouns being substituted for them; so that the Greek cannot be assumed as expressing more than the general meaning of the other inscriptions. This of course greatly detracts from the assumed value of the Rosetta Stone as a key to the hieroglyphics; and though it has now been familiar to the scholars of Europe for nearly half a century, a complete translation of its symbols still remains a desideratum. As an example of hieroglyphic writing, there is here given a representation of an inscription from the obelisk of Philæ. The symbols enclosed within the elliptical ring or cartouche signify the word 'Cleopatra'—there being a phonetic character corresponding to every letter in the Greek name, together with the symbols (a small semicircle and oval) of the

feminine termination. Thus, beginning at the top, and reading from right to left, we have nine signs respectively agreeing with the nine letters K–L–E–O–P–A–T–R–A—the small oval and semicircle on each side of the last bird, or A, marking the feminine termination.

By means of the Rosetta Stone, Dr Young was led to another important discovery, from which it appears that the sacred symbols were used not only as the representatives of things, but also of sounds; so that, by a combination of them as alphabetic characters, such new names as those of the Greek and Roman conquerors are inscribed on Egyptian monuments with the like symbolic writing as those of the ancient Pharaohs. Already history and chronology have received valuable additions from observations based on these discoveries; the royal cartouches have been identified on nearly all the most important Egyptian monuments; and historic traditions, which have been rejected as unworthy of credit, have received unexpected confirmation. The same eminent English scholar above referred to succeeded in deciphering upwards of 200 hieroglyphic symbols; and from the double meaning which these frequently bear, both as symbols and phonetic characters, we discover one important reason for the rude and imperfect mode of *picture writing* being retained by a people far advanced in civilisation, and possessed of a written language in ordinary use. Another, though secondary reason, for this has been overlooked; namely, the value of hieroglyphics as architectural embellishments. That they were frequently used for this sole purpose, is apparent from the introduction of a series of royal cartouches as features of decoration, as on the pillars at Luxor; nor can any one look on a drawing of one of the great temples, or even of an obelisk or sarcophagus, without being satisfied that the hieroglyphics form an essential and important feature of decoration, independent of their value as symbolic or phonetic characters. To the list of hieroglyphics deciphered by Dr Young, M. Champollion and others made considerable additions; and so much confidence is now felt in these interpretations, that during the present year (1849) a movable font of hieroglyphics has been cut in Paris, by means of which the inscriptions of ancient Egypt may be multiplied, and generally distributed, with the same facility as a common handbill. This is certainly not the least wonderful of the results of modern intelligence and inventive skill; and whether or not the treasure prove equal to the long-cherished expectations regarding it, it can hardly be doubted that these Egyptian mysteries will not much longer remain concealed.

In treating of hieroglyphics, those which were in use by the Aztecs, and are still visible on the ancient monuments of Mexico, must not be altogether overlooked. They are much ruder than those of Egypt, and only resemble them in the element of *picture writing* common to both, unless it be added that the Aztecs appear to have made a similar use of the cartouche. This rude substitute for writing appears to have been the only one known to the natives of America. An illustration of the mode of using it in extraordinary cases is given in the account preserved of the Indian scouts, who informed their master Montezuma of the arrival of Cortez and his followers, by sketches of the Spaniards, their ships, horses, firearms, &c.

It is probable that, even should the Egyptian hieroglyphics be thoroughly mastered, the amount of knowledge derived from the inscriptions on the temples and tombs will fall far short of what the patient sagacity of modern archæologists has already deduced from the paintings and sculptures, and from the actual relics discovered in the catacombs. No features of national manners are found by the archæologist so well worthy of study as the modes of sepulture, and the relics frequently deposited in the tomb along with the deceased. Among such the catacombs of Egypt occupy a prominent rank. By means of the sepulchral rites of the people, a clue may frequently be obtained to the nature of their religious belief; and this is peculiarly the case with the Egyptians. The human soul was regarded by them as a direct emanation from the Deity, who himself animated all nature as the soul of the universe; and their dead, therefore, invariably bore some of the emblems, and were bound up so as to resemble the form, of Osiris, the judge of the dead, and the ruler over the world of spirits. It was only those, however, who, by a virtuous life, were fitted for the change, that were immediately after death reunited to their divine source. One of the most frequent subjects of Egyptian painting represents the final judgment of the soul in the presence of Osiris. The actions of the deceased are weighed in the scales of truth. The god Thoth stands as the recording angel noting the result; and if it proves imperfect, the soul is condemned to return to earth, according to the Egyptian doctrine of transmigration, in the form of some unclean animal—most frequently that of a pig—and must endure a purgatorial penance of tedious duration ere it can return to the human form, and again appear before the dread tribunal of Osiris. In addition to this transmigratory doctrine, the Egyptian creed included the idea of a great cycle, at the end of which all things were to return to their former state. It is supposed by some writers that the practice of embalming originated in the desire of preserving the body in a fit condition to receive the soul on its return to inhabit its former dwelling. This, however, is extremely doubtful. Such an idea may have added strength to the popular inclinations when it became ingrafted on to their creed; but it is unquestionable that the same practice continued long after all belief in the ancient mythology of Egypt had ceased; and it is much more probable that it had its origin, like the sepulchral rites of all other nations, in the natural feelings of affection and respect for the dead.

ASSYRIAN ANTIQUITIES.

Quitting the antiquities of Egypt, which have attracted the attention of intelligent inquirers from the days of Herodotus to our own, we turn to the magnificent monuments of Assyrian art. These, though probably contemporaneous with the sculptures of Thebes and Memphis, have been explored almost for the first time by the indefatigable traveller Austin Henry Layard, who has already had the satisfaction of seeing the first fruits of his labours deposited in the British Museum, before returning to the scene of his singularly interesting excavations on the banks of the Tigris. Within the vast mounds to which a faithful tradition has attached the name of Nimrod the mighty Hunter, our indefatigable countryman has discovered monuments of ancient art and imperial magnificence which amply justify the title that has for ages associated it with one of the earliest settlements of the human race. Though completely distinct in character and style from the monuments of Egypt, these relics of old Assyrian art still present such affinities to them as might be anticipated from the productions of contemporaneous races and creeds somewhat similarly situated as to climate and locality. Like the ibis and hawk-headed deities of Egypt, the Assyrian marbles present frequent repetitions of the eagle or vulture-headed god—a human form conjoined with the head of a bird of prey. Among the sculptures of both countries the sphinx occurs. Not greatly dissimilar in character, and akin to it, are those most remarkable monuments of Assyrian arts and mythology—the colossal human-headed lions and bulls—which the wild Arab sheik, who witnessed their exhumation, pronounced to be 'the idols which Noah cursed before the Flood!' On the discovery of the winged human-headed lions (see fig.), Mr Layard was filled with admiration and delight. 'These magnificent specimens of Assyrian art,' he remarks, 'were in perfect preservation; the most minute lines in the details of the wings and in the ornaments had been retained with their original freshness. I used,' adds the enthusiastic traveller, 'to contemplate for hours these mysterious emblems, and muse over their intent and history. What more noble forms could have ushered the people

into the temples of their gods? What more sublime images could have been borrowed from nature by men who sought, unaided by the light of revealed religion, to embody their conception of the wisdom, power, and

ubiquity of a Supreme Being? They could find no better type of intellect and knowledge than the head of the man; of strength than the body of the lion; of ubiquity than the wings of the bird. These winged human-headed lions were not idle creations, the offspring of mere fancy; their meaning was written upon them. They had awed and instructed races which flourished three thousand years ago!'

It may suffice to add, that these wonderful monuments of Eastern art are generally covered with inscriptions in the cuneiform or arrow-headed character, which now furnish a no less interesting subject of learned investigation than the hieroglyphics of the Egyptian monuments, and give promise of no less valuable disclosures. To facilitate this, these primitive Assyrian characters have been reproduced by the skill of English workmen in a complete font of movable types, so that copies of all such cuneiform inscriptions as may be discovered can now be multiplied and distributed to any extent.

Many of the Assyrian monuments referred to consist of slabs sculptured in low relief, and still bearing traces of the bright colours with which they were originally decorated. They recall in a striking manner the allusion to the images of the Chaldeans by the prophet Ezekiel, written not many years before the gorgeous temples of Assyria were buried in the desolate heaps on the banks of the Tigris; from whence, after the lapse of so many centuries, they have been exhumed by a wanderer from the remote and unknown British Isles. The Hebrew prophet, referring to the sins of Jerusalem, says, 'She doted upon the Assyrians . . .; for when she saw men portrayed upon the wall, the images of the Chaldeans portrayed with vermilion; girded with girdles upon their loins, exceeding in dyed attire upon their heads; all of them princes to look to, after the manner of the Babylonians of Chaldea, the land of their nativity: she doted on them,' &c. Though the character of these early monuments of Assyrian art is entirely distinct from those of Egypt, Mr Layard's interesting excavations have brought to light curious evidences of the intercourse between Egypt and Assyria; and farther investigations can hardly fail to throw additional light on this new chapter in the history of early nations.

ANTIQUITIES OF HINDOOSTAN.

The cave temples of Elephanta and Ellora, and the numerous ruined temples scattered throughout the Indian empire, form another most interesting branch of monumental remains connected with one of the early races of the human family. Certain general resemblances are traceable among all these relics of Eastern art and ancient mythology. Much undue weight, however, has frequently been attached to this, as though it pointed to some intimate intercourse or great similarity in faith and manners among those widely-separated races. The worship of the cow, both in ancient Egypt and in India, has frequently been referred to as conclusive evidence of an intimate connection between the religions of these two countries. During the war in Egypt some sepoys of our Indian army, who crossed from the Red Sea to the Nile, were attracted, on their visit to the temple of Dendera, by the sculptured representation of the cow of Athor, and immediately prostrated themselves before it. This has been regarded by several writers as triumphantly proving the kindred character and common source of the two creeds; but the argument will not stand close investigation. Had the Indian sepoys been arrested by some of the arbitrary and unintelligible symbols of Egyptian hieroglyphics, which possessed to them a sacred meaning, some importance might justly be attached to it; but the selection of the cow by two agricultural nations as a sacred symbol, may admit of very easy explanation without supposing them to have had any previous intercourse. Mr James Fergusson, the most recent investigator of the antiquities of Hindoostan, after personally examining the architectural remains of Egypt and India, denies that they have any essential features in common; and all the latest inquiries into the subject of Indian antiquities seem to lead to the conclusion, that the ideas which have been so generally received of the immutability of the Hindus, and the primeval antiquity of their remains, have been based on theories unsupported by evidence. Already the colossal elephant which gave name to Elephanta has progressed so rapidly to decay, as to excite just doubts of its great antiquity at the time of its discovery; and if the general diffusion of the religion of Buddah in India is correctly fixed at a period little more than 150 years B.C., it is obvious that the remains of temples dedicated to that religion must no longer be classed along with those of Egypt. Mr Fergusson assigns them a far more recent date than even this might imply. He has carefully studied them, and made drawings of their various details; and in his 'Picturesque Illustrations of Ancient Architecture in Hindoostan,' he advances the opinion that the most ancient of the cave temples are not many centuries old. India, however, has undoubtedly formed an early seat of civilisation; traces of which are apparent both in the faith and the manners of the more ancient races that still occupy the country, though these are much too slight to justify many of the arguments that have been deduced from them. Impressed, indeed, as all European thinkers are, with the influence of religious opinions which have been slowly developing their powers during many centuries, they are too ready to take for granted the same slow development in judging of Eastern creeds. Recent investigations prove, on the contrary, that the religion of the Sikhs, and those of many other Indian sects, have sprung up and been adopted by whole races almost in our own time.

THE CELTÆ.

The whole investigations of the archæologist into the remains of the ancient occupants of Europe, tend to confirm the idea derived from the sacred records, that we must look to the East as the cradle of the human race. The Celtic, the Sclavonian, and the Teutonic races, whose descendants, distinct or intermingled, now

people nearly the whole of Europe; and even the Zingali, or wandering gipsies, who are scattered without being incorporated among them, are but successive waves of the same great tide of population which has gradually flowed onward towards the north-west, until, like a pent-up flood, it has at length overflowed its ancient barriers, and is peopling the new world of America with these same descendants of the early nomade tribes of Asia.

It is in tracing out the annals of these aboriginal races that the labours of the archæologist are chiefly productive of valuable results, deciphering what may be termed the unwritten history of man, and bringing to light the lost records of our earliest ancestry. The investigations of the archæologist carry us back at once to a period of which history takes no note, placing before us clear and intelligible records of the character and habits, and of the amount of civilisation of the aboriginal tribes of Europe and the British Isles, many centuries before the Romans carried the arts of peace in the train of their conquering legions.

Intelligent chronologists have thought themselves successful in tracing the passage of the Celtæ towards the western parts of the old world 2100 years before Christ; and Higgins, an able archæologist, in treating of the Celtic Druids, has brought forward evidence, founded on their astronomical knowledge, to prove their colonisation of Britain about 1600 years before the Christian era. This curious calculation is based on the knowledge we possess of the religious festivals of the Druids, the dates of which were affected by that slow movement of the seasons through the signs of the zodiac caused by the precession of the equinoxes. The direct archæological evidence which may be brought to bear on the subject, confirms such speculations by proving the existence of a native population in Britain at a very early period.

Such speculations are possessed of peculiar interest and value. If the dates of this remote chronology can be established, they enable us to connect the infant history of our own country with the great historic nations of antiquity, and lead us to this striking chronological coincidence, that just about the time when the patriarch Jacob journeyed into Egypt to behold his long-lost son, the nomadic Celts were crossing the English Channel, and peopling the savage coasts of the British Isles. It gives new life to our ancient annals, long buried in fable and error. We behold in idea the British Druids raising their ponderous altars and temples amid our northern forests, while the priests of Isis were consecrating on the banks of the Nile the giant monuments of ancient Thebes, and while the great Jewish lawgiver was setting up the pillars of the twelve tribes in the wilderness of Sinai.

The evidence from whence we trace the records of the Eastern wanderers who first disputed with the wolf and the wild boar of the primeval forest their right to the uncultivated soil of our insular home, while it confirms such curious speculations, also satisfies us that these rude aboriginal tribes were almost destitute of any rudiments of the arts of civilisation. In Denmark, in Ireland, and in the north of Scotland, the evidences of this primeval race abound to a degree unknown in other parts of Europe, where the wave of Roman invasion has obliterated many of the traces of aboriginal occupants. But it is in number and variety chiefly, and not in any peculiarity of characteristics, that the Celtic antiquities of these countries are distinguished from those of the rest of Europe. The similarity, indeed, which is discoverable in the Celtic remains not of Europe only, but of Asia, place the fact beyond doubt, that in treating of the British aborigines, we are referring to the same races whose relics can still be traced on the vast plains of Central Asia.

Within the last few years tumuli have been frequently opened in the neighbourhood of the Black Sea, resembling in every respect those of the earliest and rudest character which are found on the downs of Wiltshire, or scattered over the Orkney Islands, and furnishing evidence of temporary locations of the migratory tribes which ultimately crossed the English Channel, and first peopled the British Isles. In treating, therefore, of the archæology of Great Britain and Denmark, we refer, to a great extent, to what they possess in common with the rest of Europe.

BRITISH ARCHÆOLOGY.

The evidences we possess of the national character and habits, and of the various degrees of civilisation of the aborigines of Great Britain, are derived from their ancient dwellings and sepulchres: from cromlechs, barrows, cairns, and tumuli; from their weapons, ornaments, and pottery; and from the remains of their boats and agricultural implements. Remote as is the period the history of which it is sought to recover, the evidence on which we have to reason is neither scanty nor isolated. Scattered over the uncultivated downs of England and Scotland, there still remain numerous examples of the rude dwellings of our barbarian ancestry which have escaped the wasting tooth of centuries, or the more destructive inroads of the plough, and afford abundant indications of the barbarism which surrounded the homes of our forefathers. On the Yorkshire moors, on the extensive plains of Wiltshire, on the Sussex downs, and even on the cultivated hills of Surrey, as well as in Aberdeenshire, Morayshire, and in the Shetland and Orkney Islands, the ruined dwellings of the ancient British savage still speak to us in no uncertain language of the unskilled and simple condition in which he lived.

I. THE STONE PERIOD.

Subdividing into periods, which are warranted alike by reality and convenience, we shall advert first to the

Pit and Cave Dwellings.

Sir Richard Colt Hoare, in his valuable work on ancient Wiltshire, remarks—'We have undoubted proofs, from history and from existing remains, that the earlier habitations were pits, or slight excavations in the ground, covered and protected from the inclemency of the weather by boughs of trees and sods of turf.' These locations are almost invariably found in groups, showing the gregarious and social habits of man in the rudest stage; but the low state of their occupants, physically and mentally, is apparent from the character of the simple dwellings. They consist of mere excavations in the earth, of a circular or oblong form, and averaging about eight feet in diameter. They are excavated generally about three feet below the surface, and surrounded with a raised edge, save where an opening is left, which no doubt served for door and window, and probably for chimney also. On digging in the centre of these pit-dwellings, ashes and charred wood are found, the evidences of their domestic fires; and with them occasionally flint arrow-heads, mixed with bones and other refuse, indicating their connection with the earliest race whose weapons are known to us. The ancient names of some of these primitive locations, such as that of *Pen Pits* in Wiltshire, retain an evident allusion to their characteristics.

Another class of dwellings, examples of which still remain, may be considered as the earliest improvement on these primitive lairs. They also consist of pits, but edged with stones, and occasionally accompanied with small circular field enclosures, as if indicating the rudiments of a pastoral life—the folding of sheep or cattle. The use of stone in the construction of their dwellings appears to have led to extensive changes in the habits of the early Britons: but it is curious to find that in this advanced stage the dwellings are still subterranean; while some of them are on so large a scale, as to suggest the probability of their being adapted to the habits of a people who sheltered themselves, like the Esquimaux and the Greenlanders, from the inclemency of a northern winter. An account of very curious and little-noticed remains of this class in Aberdeenshire is preserved in the 'Archæologia Scotica,' vol. ii.

These consist of a number of subterraneous habitations, spread over a district of nearly two miles in diameter. The situation had originally been a forest, as appears from many large trunks of trees still dug up there; but it is now a dry moor. The roofs of these dwellings have been uncovered from time to time by the ploughshare striking against them. The entrance to them appears to have been between two large stones, placed in a sloping direction at one end, between which the entrant has to slide to a depth of about six feet, when he finds himself in a large vault, occasionally upwards of thirty feet long, and from eight to nine feet wide. Upwards of fifty such subterranean dwellings have been found in one district. The walls incline inward, so as to approach the form of an arch; and across these are laid large stones, some of them five and six feet in length, and above a ton in weight. Where the ground in the neighbourhood of these ancient cave dwellings has escaped the inroads of the plough, small earthen enclosures, similar to the ruder pit dwellings already described, are almost invariably found near them, having no doubt formed the summer habitations of the constructors of these massive subterranean retreats.

Tumuli, Barrows, and Cairns.

The raising of mounds of earth or stone over the remains of the dead is a practice which may be traced in all countries to the remotest times. The simplest idea that can be suggested to account for its origin is, that as the little heap of earth displaced by the interment of the body would become the earliest monument by which survivors were reminded of departed friends, so the increase of this by artificial means into the form of the gigantic barrow would naturally suggest itself as the first mark of distinction to the honoured dead. To this simplest construction the term *barrow* should be exclusively reserved, while the *tumulus* is distinguished by its circular form. The latter name, however, includes a considerable variety. Sir Richard Colt Hoare has distinguished fourteen different kinds of barrows. Among these he includes the pond barrow, which was certainly not sepulchral, but should be classed with the pit dwellings already described. Others of the distinctive features marked by him are such slight or rare variations from the ordinary type, that their recognition, as essentially differing from the others, only tends unnecessarily to complicate the inquiry. The following are the most marked and distinct, their names indicating their shape:—1. The cone barrow; 2. The bell barrow; 3. The bowl barrow; 4. The female barrow, called by Stukely the Druid barrow. It is slightly elevated, and enclosed with a vallum, or wall of earth, and its usual contents seem to justify the name here assigned to it. 5. The twin barrow, which consists of two conical mounds enclosed by a foss, one of them being generally larger than the other. The others are more or less modifications of these forms and arrangements, and no such peculiarities in their contents have yet been observed as to justify their being regarded as essentially distinct.

The *cairn* is only another and more artificial form of the tumulus, and is frequently found in combination with the latter. Silbury Hill, near Marlborough in Wiltshire, is the largest tumulus in Britain, and probably in the world. This vast artificial conical mound of earth measures 2027 feet in circumference, it covers an area of five acres and thirty-four perches of land, and its perpendicular height is 170 feet. The immense labour required in order to explore the contents of this huge pile, long preserved it from the investigations of the antiquary, though forming the most remarkable object of its class, and occupying a place among the Celtic monuments of Wiltshire, where antiquarian research has been conducted with a degree of zeal and intelligence worthy of earnest scientific investigation. At length, during the present year (1849), the Archæological Institute of Great Britain and Ireland accepted of an invitation from the citizens of Salisbury to hold their annual congress in that ancient cathedral town. The barrows of the Wiltshire downs, so long the objects of Sir Richard Colt Hoare's diligent and successful researches, naturally formed a prominent object of investigation; and it was determined that the long-buried mysteries of Silbury Hill should at length be explored. A tunnel was accordingly opened in the side of the hill, and carried on till it had nearly reached the centre, when the operations of the excavators were suspended until the arrival of the members of the Institute. When the work of excavation was resumed, the tunnel was carried to the very centre of the hill, a distance of 144 yards from the entrance, but without any discovery being made. It had been thought exceedingly probable that the mound might prove internally to consist chiefly of an artificial structure of stone; a cairn, in fact, covered over with earth, as has been found to be the case in some of the largest tumuli hitherto opened. When the excavation had proceeded so far as completely to disprove this, it was still confidently anticipated that, on reaching the centre, a cromlech or kistvaen would be found, with its usual sepulchral contents, and most probably accompanied with relics of corresponding importance to the magnitude of the superincumbent earth-pyramid. All these speculations, however, have proved to be unfounded, though it is still possible that, before the search is abandoned, the kistvaen, which was supposed to lie concealed within this vast tumulus, may be found, contrary to the wonted custom in these ancient sepulchral mounds, at some distance either above or below the natural surface of the ground. The research, so far as it has proceeded, has at least sufficed to show that neither the cromlech nor the cairn must be invariably looked for in the larger tumuli.

The most remarkable monument of the latter class is that of Newgrange, another large artificial mound, or rather cairn, in the county of Meath, near Drogheda. This Celtic monument presents the appearance of a hill about 400 feet in diameter, and about 70 feet high, the top of which is covered over with a luxurious growth of trees. So early as the year 1699, some labourers employed in removing stones for the repair of a neighbouring road, accidentally discovered an opening into a passage formed of large, upright, and horizontal stones, which communicates with three large chambers similarly constructed in the centre of the mound. This remarkable tumulus was explored and minutely described by Governor Pownall in 1770. The roof and walls of its chambers are curiously ornamented with rude carvings; and within these recesses were found large stone urns or basins, which still remain. 'It would be in vain,' says Mr Wakeman, an Irish antiquary, in describing the cairn of Newgrange—'it would be in vain to speculate upon the age of a work situate upon the banks of the Boyne, which, if found upon the banks of the Nile, would be styled a pyramid, and perhaps be considered the oldest of all the pyramids of Egypt.' Undoubtedly the whole class of Celtic tumuli and cairns may justly be reckoned as belonging to the same order of monumental erections, of which the Egyptian pyramid is the most perfect form.

Duns, Borghs, Vitrified Forts, &c.

Next to the sepulchral monuments of remote ages, their fortifications form the most durable, as well as the most characteristic evidences of their skill and degrees of civilisation which remain to us. The construction of offensive and defensive weapons is the very earliest proofs which the rude and solitary savage affords of that intelligence and design which distinguishes him from the brutes. This is succeeded by the domestic and social relationships from whence spring society, ranks, laws, and all the primary elements of civilisation. Among the first evidences of such progress is the union for mutual defence, and the construction of strongholds for the safety of the community, and the protection of their goods when threatened by invading foes. The summits of numerous hills in Scotland, Ireland, and Wales, retain traces of ancient

hill forts of various descriptions, from the rude earthen ramparts of the circular dun, to the elaborately-constructed borgh, or stone fort, which is still to be found, chiefly in the Orkneys and Western Isles. Some of the simplest earthen duns, consisting of a round or oval earthen wall and ditch, surmounting a rising ground, may be presumed to be the work of the same rude architects who occupied the pit dwellings, and constructed the earthen cattle folds already described. Rapid progress, however, would be made in the indispensable art of military engineering. Every unsuccessful defence of such strongholds, and every assault on their feeble ramparts, would very naturally suggest the necessity for more effective fortresses, and we accordingly find examples of them, which have escaped the inroads of the plough, exhibiting considerable progress in the art of fortification.

One of the most interesting examples of the ancient British hill fort is the White Caterthun, constructed on the summit and around the sides of a conspicuous hill in Forfarshire, situated about five miles north of Brechin. It is of an oval form, composed of an immense dike of loose white stones, the enclosed area of which is 436 feet in length, and 200 feet in breadth. Outside of this wall is an earthen rampart and ditch, and about 100 yards lower down, the remains of another double rampart and ditch are visible. Within the centre area are the foundations of a rectangular building, and a hollow, now nearly filled with stones, which appears to have been the draw-well of the garrison. The literal translation of *catter-thun* is *camp town*; and it may be added that it forms one of the various native strongholds which have been conjectured to be the camp of Galgacus, the leader of the Caledonian host which attempted to withstand the Roman invaders in the famous engagement with Agricola.

Similar in character to these latter strongholds are the more celebrated vitrified forts of Scotland, which have formed the subject of so much antiquarian controversy since attention was first drawn to them by Mr John Williams in 1777. This intelligent observer was employed by the trustees of forfeited estates, in 1773, to superintend some operations in the Highlands in his capacity of a civil engineer; and his attention was called to some of these singular remains which he fell in with in the localities he had to visit. He accordingly published, about four years afterwards, a treatise on the subject, entitled 'An Account of some Remarkable Ancient Ruins, Lately Discovered in the Highlands and Northern Parts of Scotland.' In his preface, the author remarks that his discovery was esteemed so extraordinary, that it was generally looked upon as a fiction, and no London publisher could be found to undertake its publication. Mr Williams was the first to apply to these singular structures the name Vitrified Forts; and though the idea of their artificial construction was almost immediately disputed by various able writers, who attempted to assign to them a volcanic origin, further investigation has abundantly proved the justness of Mr Williams's descriptive term.

In consequence of the frequent controversies on the subject of vitrified forts, and their very unsatisfactory results, the Society of Antiquaries of Scotland directed special attention to it in the year 1825; and a series of observations, made chiefly under the direction of Dr Samuel Hibbert, one of the secretaries, and since published in the 'Society's Transactions,' have furnished a valuable mass of information on the subject, the result of which may be thus stated:—Dr Hibbert arrives at the conclusion that the vitrification was no part of the process of erection, but resulted accidentally, from the frequent kindling of fires at particular spots, and chiefly from the ancient beacon-fires, which formed the constant signals of war and invasion in Scotland from the remotest ages down to the period of the Union. Dr Hibbert, accordingly, rejects the name of *Vitrified Forts*, preferring that of *Vitrified Sites*, as more correctly descriptive of these ancient remains, many of which he conceives were only enclosures intended for the protection of beacon-fires. The only argument which tends to throw any doubt on the result of these careful researches is that of Dr Macculloch, who affirms that, in situations where the most accessible materials for constructing a stone fort are such as are incapable of being vitrified, suitable materials have been selected and brought with great labour from a distance. Further information is, however, needed to confirm this point. Granite, porphyry, limestone, sandstone, and what is called puddingstone, are all more or less easily fusible by fire, and capable of being reduced to the vitreous state of the materials found in these singular erections, when mixed with the accumulated ashes of burned wood as a flux, and repeatedly exposed to fire. The prevalence of one or other of these fusible materials in almost every district of Scotland, renders exceedingly doubtful any opinions founded on the argument of Dr Macculloch, or the evidence it would afford of the practical skill and ingenuity of the ancient Caledonian. We shall see, however, that the arts of the native Briton, as well as of the ancient tribes of Northern Europe, included at a very remote period that of smelting ores and working in metals; so that the fusing of their castellated ramparts, for the purpose of more effective defence, is not at all inconsistent with their other acquirements.

The borghs or circular stone forts which abound in the northern and western isles of Scotland belong to a later period than the ancient British duns, and are most commonly ascribed to Danish invaders. They consist of circular structures, tapering towards the top, built of unhewn stones, and constructed without the use of cement; within the outer wall, which inclines inward from its tapering form, an inner perpendicular wall is attached to it by large cross stones, which form a series of flights of stairs, lighted by loopholes which look into the central area.

A class of buildings bearing a singular resemblance in some respects to the Scottish borghs are the *Nuraghes* of Sardinia, first described by M. Petit-Radel, in a work published at Paris in 1826. The largest of these singular erections are more complicated than the Scottish borgh, consisting of a circular central tower, tapering towards the top, and flanked at four points by smaller towers, united by a solid mass of masonry, which forms a square base to the whole building. Others of these, however, are simpler in form, and present considerable resemblance to the Scottish borgh; though they appear, when perfect, to have been covered over with a stone dome, or arched roof, and are considered to have been sepulchral monuments, like the more ancient catacombs and pyramids of Egypt.

Round Towers.

While the vitrified forts have formed the favourite subject of controversy during the greater part of half a century to the archæologists of Scotland, the round towers have proved a still more fertile theme for the antiquarian controversialists of Ireland. The most extravagant theories were suggested to account for these singular erections. Phœnician, Indian, Danish, and Celtic analogies were all brought to bear on the subject, often with very little judgment or observation. The laborious and intelligent observations of Dr Petrie, the eminent Irish archæologist, have at length put all these extravagant fancies to flight. Instead of theorising on the subject, he personally investigated these remarkable structures, and arrived at the conclusion that they are ecclesiastical edifices, ranging in date from the introduction of Christianity into Ireland down to about the tenth century. They are believed (by Dr Petrie and his adherents) to have been designed not only for belfries and watch-towers, but for monastic treasure-houses and strongholds, adapted for places of refuge, whither the clergy could retreat with their most valuable effects when threatened with danger from the assaults of barbarian spoilers.

While these remarkable edifices abound in Ireland, only two examples of them are found in Scotland, and

they are altogether unknown in England. One of the Scottish examples, however—that of Brechin—is a remarkably fine specimen of the later and more adorned style, with the exception of the spire with which it is surmounted, which is obviously an addition of a later age. The other Scottish example is at Abernethy. A comparison of these structures with other ecclesiastical remains in Scotland, independent of written records, affords the most satisfactory confirmation of Dr Petrie's speculations, leading to the conclusion that they are the work of the Dalriadic Scots; a race which emigrated from the north of Ireland in the beginning of the sixth century, and established themselves in Argyleshire, to which they gave the name of Dalriada, it is said, from their leader Riada or Reuda. Within this narrow district the Scots remained confined for upwards of three hundred years, until, in the ninth century, they effected alliances with the northern Picts, and with the assistance of Irish allies, recovered their own kingdom from a Pictish intruder, and at length extended their influence over the whole of North Britain, including the districts where these memorials of Irish architectural skill still remain.

These proceedings, however, as well as the interesting memorials of them to which we have referred, belong to a much later period than that of the Celtic tumulus, or hill fort, or of the ancient weapons and implements which recent researches in connection with them have brought to light.

Celtic Weapons and Implements.

The investigation of the contents of Celtic tumuli has furnished the most valuable amount and variety of information which the archæologist possesses, wherewith to arrive at some degree of knowledge of the habits and degrees of civilisation of their constructors. The contents of these ancient sepulchral monuments, amid all their minute varieties, clearly indicate three distinct stages of society. The first was before the introduction of metals, when arms and implements consisted solely of spear and arrow-heads of flint or bone, and of hammers of stone, and when pierced shells, stones, and beads made of horn or bone, formed the chief personal ornaments. The long barrow, formed like a gigantic grave, appears, from its most common contents, to be the sepulchral memorial belonging to this era, to which archæologists concur in giving the name of the Stone Period—that is, the period when stone and flint formed the only known materials with which to construct the rude weapons and implements required in the operations of agriculture, in war, or the chase. The pit-dwelling may in like manner be assigned as the residence of the same period; and it is extremely doubtful if even the rudest specimens of pottery found in Celtic tumuli must not be regarded as indicative of a period later than that when the untutored savage found in his shallow earth-pit, roofed in with boughs and turf, a sufficient home and shelter for himself and his family.

A similar state of savage life exists in our own day in the islands of the Southern Ocean. In the absence of all knowledge of the use of metals, the Tahitians, the New Zealanders, and other natives of these islands, are found to construct flint spear-heads, stone adzes and hammers, and the like weapons and implements, so exactly resembling those found in British barrows of the Celtic Period, that it is frequently difficult to distinguish the one from the other. In like manner the Red Indians of America were wont to furnish themselves with weapons of flint; while the horn and bone lances of the modern Esquimaux no less nearly resemble similar relics found in early Celtic barrows. The tasteful carving of the New Zealander's club and paddle are the first evidences of dawning civilisation, showing a desire in the savage mind for something more than the mere supply of his natural wants, and the gratification of his animal passions. Similar evidences of the dawn of taste furnish us with the first tokens of progress in the early Celtæ.

The use of the sepulchral urn must be regarded as in itself a proof of some degree of progress. The earliest of these, however, are of the rudest possible description. They are fashioned with the hand, of coarse clay, by workmen ignorant of the turning-lathe or wheel of the potter. They are generally extremely unsymmetrical, merely dried in the sun, without any attempt at design, and devoid of ornament. Of a later period, though still accompanied only with weapons and implements of stone, the urn is found neatly fashioned into various forms, and ornamented with different patterns of lines, traced by some instrument in the soft clay, after which the vessel has been baked with fire. The great number of these urns that have been found, and the abundance of the stone and flint weapons scattered over the whole British Islands, and indeed over most parts of Europe, furnish evidence of the same rude tribes having continued with little change to occupy Europe during many generations. A change, however, of a most decided character broke in at length on the barbarous habits of this primitive British race, not improbably by the irruption of more civilised tribes from the East.

II. THE BRONZE PERIOD.

The change by which we detect the close of the long era of barbarism in Europe, and the introduction of a new and more advanced period, is the discovery of the art of smelting ores, and the consequent substitution of metallic implements and weapons for those of stone. The first metal worked in Britain undoubtedly was tin, and this may have occurred even before the close of the Stone Period. The early knowledge of this metal is readily accounted for by the abundance of the ore in Cornwall, where it frequently occurs near the surface, and is easily reduced by charcoal and a moderate degree of heat to the state of metal. The history of the trade in tin commences with the very earliest records of commercial intercourse with Britain. The Phœnicians at a remote period visited the British coasts to procure lead, tin, and furs, in exchange for earthenware and instruments of copper. This was unquestionably many ages before the Roman invasion. Long before that period the Greeks had conferred on Cornwall and the neighbouring isles of Scilly the name of the Cassiterides, or Tin Islands, and frequent recent discoveries of Greek coins and other relics have furnished additional evidence of the intercourse which that ancient civilised nation kept up with our island. One of the most remarkable of these relics of remote foreign intercourse with Britain is a bifrontal bust of the Egyptian Isis, covered with hieroglyphics, which was found in the course of some excavations in South Street, Exeter, so recently as 1833. Some Greek coins dug up in the same neighbourhood are mostly of dates fully three centuries before the Christian era.

Notwithstanding the early intercourse thus enjoyed with some of the most civilised nations of antiquity, the influence was altogether local and temporary. The isolated nature of the locality where the veins of tin and copper abound, secluded the early natives of Cornwall from necessarily coming much in contact with the inhabitants of other parts of the island; and as the exchange which they received from foreign traders must have far surpassed in value anything they could hope to gain by bartering with the other British tribes, it is extremely probable that the knowledge and use of metals may have long remained confined to that peninsula. Certain it is, that among all the varieties of ornaments and utensils discovered in ancient British barrows, no instance is recorded in which any article wrought in tin has occurred.

From the few and slight notices of early writers, we learn that bronze was among the articles imported by the Phœnician traders, and given in exchange for the tin which they procured in Cornwall. Evidence, however, is not wanting to prove that both in Britain and along the north of Europe the weapons of the Bronze Period were manufactured by native tribes. In France,

Denmark, Norway, and in the British Isles, moulds made both of stone and metal have been found, exactly corresponding with the bronze axe-heads called *celts*, and with the adzes, spear-heads, daggers, and other weapons found in the barrows of the Second Period. While some of the moulds are wrought with great delicacy, others are so rude as to convey the idea to us that their possessors fashioned their own moulds and cast their weapons much in the same way that a modern sportsman supplies himself with leaden bullets.

The writings of Sir Walter Scott have sufficed to add a fictitious interest to more than one curious tradition of elder times; and in no case is this more noticeable than in the use he has made in the pages of 'Kenilworth' of the curious relic of Scandinavian mythology preserved for so many ages in the popular tradition of Wayland Smith. Although the legendary tales of the wise Smith have so long held a place among the traditions of Berkshire, and the ancient cromlech in the neighbourhood of Farringdon has for centuries borne the name of Wayland Smith's cave, these tales are no less common throughout all the branches of the Teutonic race. The story of Wayland is related at length in the 'Edda,' an ancient Scandinavian poem, embodying the wild and sublime conceptions of northern mythology, and forming the original sacred writings of the Norsemen. It occurs also in the earliest Icelandic sacred poems, and is frequently referred to in the great German epic poem, the 'Nibelungen-Lied.' In all these, different versions are given of the same story preserved by the Greek poets, and evidently a mythic record of the first introduction of the art of working in metals among the northern races.

This Teutonic myth may be unhesitatingly regarded as the traditionary memorial of the advent of the Bronze Period among the northern races of Europe. We see in it the hero-worship of the rude Norsemen deifying their Scandinavian Vulcan when he had passed away to the rewards of the Valhalla of their wild creed, and testifying their estimate of the gift he had bestowed on them by according to him divine honours. The remote antiquity to which the wild legends of the Norsemen are referrible, show in some degree the very early period in which this great change must have taken place. In the writings of Alfred the Great a curious allusion occurs which may help to confirm this. Reflecting on the uncertainty and fleeting nature of all worldly fame and honours, the royal poet exclaims—

> 'Who knows where the bones lie
> Of the wise Weland?
> Under what mound or barrow
> Are they now concealed?'

From this it is obvious that even in the early times of the great Saxon, the story of the old metallurgist had become an ancient and uncertain legend.

The opportunities afforded by the more extended study of archæology for comparing the indigenous antiquities of the various countries of Europe, enable us more distinctly to demonstrate the extreme state of barbarism in which the aborigines of the Stone Period must have lived, and the immense changes effected on this by the introduction of the art of working in metals. It has been previously observed that the sepulchral monuments of the First Period, with their accompanying weapons and implements, are not peculiar to Britain, nor, indeed, are they at all so common in England as on many parts of the continent of Europe. They are of frequent occurrence on the coasts of the Baltic, and along the shores of the German Ocean. They are found in Holland, Brittany, and Portugal, and on the islands and the coasts of the mainland bordering on the Mediterranean Sea; but they are scarcely ever discovered far inland, unless in the vicinity of some large river or lake. They are, in fact, the monuments of a rude and thinly-scattered people, who subsisted by hunting and fishing, and whose imperfect implements totally incapacitated them from penetrating into the interior of these countries, encumbered as they then were by vast forests and morasses, which bade defiance to their imperfect implements and simple arts.

The records of the infancy of many great nations preserve some mythic or traditional allusion to the great change effected on the condition of man by the introduction of the metals. In the Sacred History we learn of the sons of Adah—Jabal, 'the father of such as dwell in tents, and have cattle,' and his brother Jubal, 'of such as handle the harp and organ'—the fathers, in fact, of a pastoral life, with its peaceful but unprogressive virtues, such as may still be witnessed among the nomade tribes of Asia. But her sister Zillah bare Tubalcain, the Vulcan or Wayland of the Mosaic records, 'an instructor of every artificer in brass and iron.' A curious custom among the ancient Egyptians preserves to us in like manner evidence of that people having passed through the same great change in the early stages of their civilisation. In preparing the mummies of the deceased for sepulture, the embalmers proceeded to extract the brain through the nostrils by means of a bronze or iron probe; but it was not permitted to use any instrument of metal in opening the body. The incision in the side, through which the intestines were extracted, could only be made with a sharp Ethiopian stone; and when they had been cleansed and replaced, the eye of Osiris, the Judge of the Dead, was placed as a mysterious seal over the sacred incision. The stone knives of the embalmers have frequently been found in the catacombs. They seem to indicate that some process of embalming had been in use among that ancient people before the introduction of metals, and that (with a feeling easily understood), while the bronze or iron knife was adopted for all common uses, the more ancient implement was retained unchanged for making the sacred incision in the dead.

Milton in like manner refers to the introduction of the art of working in metals in the eleventh book of the 'Paradise Lost,' when the Archangel Michael shows to Adam the future history of his progeny. The new art is there also introduced as the great source of transition from the pastoral state; and the picture the poet presents to the mind singularly realises to us the idea, already referred to, of our own rude ancestors smelting their ores, and each casting his weapons and implements as best he might:—

> 'In other part stood one who, at the forge
> Labouring, two massy clods of iron and brass
> Had melted (whether found where casual fire
> Had wasted woods on mountain or in vale,
> Down to the veins of earth; thence gliding hot
> To some cave's mouth; or whether washed by stream
> From under ground); the liquid ore he drained
> Into fit moulds prepared; from which he formed
> First his own tools, then what might else be wrought,
> Fusil, or graven in metal.'

No wonder that the wild Norseman elevated to the rank of a Divinity the introducer of the metals to his race. The changes effected by the greatest of modern inventions—by the mariner's compass, the steam-engine, the railway, or even by the printing-press—are not more remarkable than those first produced by the introduction of the metals. It seems probable that we owe to the Teutonic races—among whom we find the legends of Wayland the wise Smith so widely diffused—the introduction of this invaluable means of civilisation among the older Celtæ. Evidences are not wanting to suggest the inference, that we owe to a far earlier invasion than those of the Belgæ, the Danes, or the Saxons, the introduction of the metallurgic arts into the British Isles. What particularly marks this change with the characteristics of invasion by a superior race, is the absence of marks of transition. Had the original Celtæ gradually learned to supersede their rude weapons of stone and flint by the more efficient ones of bronze, we might expect to find the latter in the same class of barrows, and even deposited together under the same tumulus. Such, however, is not the case. The *long barrow* is destitute of relics of the Bronze

Period; and while it is notorious that there is nothing on which changes are more slowly effected among nations than their sepulchral rites and memorials, we look in vain in the new implements of metal for any cause to account for the change in the forms of the tumuli. The conclusion may therefore be regarded as a legitimate one, that they also are characteristic distinctions, marking customs introduced by a new race.

We may picture to ourselves the ancient Celtæ disturbed by the invasion of tribes armed with weapons scarcely less novel to them than those with which the Spanish discoverers astonished the natives of the New World. Once more they forsook the Eastern shores, and moved towards the north-west, while the forests rang with the woodman's axe, the quarry was wrought for building materials, and the high lands were crowned with the ancient dun, or hill fort, the refuge of a warlike, yet pastoral and partially-civilised people, who had learned to combine for mutual safety and the community of interests which civilisation gives rise to.

Cromlechs, Standing-Stones, Temples, &c.

A cromlech consists of several large upright stones, almost invariably without the slightest marks of artificial shaping, over which another large unhewn stone is laid so as to form a kind of rude chamber, as in the following illustration. Occasionally they are found

enclosed by a circle of stones, thereby further assimilating them to the larger Druidical remains, such as Stonehenge. Various theories have been advanced as to the purposes for which they were constructed; the most generally received of which represented them as Druidical altars, designed, as some conceived, for human sacrifice. Careful investigation, however, has sufficed in this, as in most other cases, to show of how little value the mere theorist's labours generally are. Whenever excavations have been made in their centre, they have been found to cover remains which clearly point to their use as sepulchral memorials. Some have been found to contain calcined bones, others entire human skeletons, while both sepulchral urns, and weapons and personal ornaments, have been frequently discovered among their contents. A curious disclosure of one was made during the construction of the Phœnix Park at Dublin in the year 1838. An ancient tumulus, which measured 120 feet in circumference, and about 15 feet in perpendicular height, was ordered to be levelled. During the progress of the work, four *kistvaens*, or coffins formed of separate slabs of stone, each containing an urn of baked clay, filled with calcined bones, were discovered. One of these, which was preserved in a nearly perfect state, is now in the Museum of the Royal Irish Academy. It is gracefully and regularly formed, and neatly decorated with a variety of zig-zag ornaments. In the centre of the mound a cromlech was disclosed, the large covering-stone of which measures 6½ feet in length. Within this were found two perfect male skeletons, and the remains of another. Underneath each of the skulls a quantity of small shells were found, rudely pierced, and strung together with vegetable fibre, so as to form necklaces; and beside them lay a *fibula*, or brooch of bone, and a weapon made of flint. From this, then, it is obvious that the cromlechs must no longer be regarded as altars for barbarous and bloody sacrifices; but as sepulchral monuments, furnishing evidence to us of a patriarchal government, and of the reverential honours paid by the builders to their chiefs. The labour of constructing such a monument, by a people furnished with such imperfect implements, must have exceeded that which was expended on some of the vast sepulchral memorials of the civilised Egyptians.

Cromlechs are found scattered over the same countries of Europe to which we have already referred as still possessing the sepulchral mounds of this ancient race of builders. Many of them are of far larger proportions than that discovered in the Phœnix Park. Wayland Smith's Cave in Berkshire is a work of this class, and so also is Kit's Coty House in Kent. It has been attempted to establish that the latter is the monument of Catigern, the British commander who fell in the same battle in which the Saxon invader Horsa was slain, A.D. 455; but the marked character of this ancient monument evidently proves it to belong to a much earlier period in our island history.

Scattered over the British Islands, and many parts of the continent, are *standing-stones*, as they are termed—rude blocks of stone placed upright, and evidently designed as commemorative of some remarkable event, the scene of a great victory, or the spot where a mighty chief fell. Others, of a later character, are hewn into regular forms, and decorated with a variety of sculptures. Still later, we find them bearing inscriptions—some in characters still undeciphered, some in the Icelandic and Saxon Runes (a written character, which the Norsemen are thought to have derived in part from the Phœnicians), and some in the Byzantine character, and generally decorated with the cross, the universal emblem of the changes affecting the Christian period to which they belong. Numerous stones of the same class are also found in Scotland, Ireland, Denmark, and other northern countries of Europe, sculptured with snakes, dragons, and the like figures, generally interlaced so as to form a variety of beautiful patterns. Others are covered with figures on horse and foot, and occasionally with symbolic representations, among which the elephant and other devices evidently derived from the East, furnish an additional argument in favour of the Asiatic origin of the early northern races.

The most ancient, and probably the largest, Celtic or Druidical *temple* of ancient times was at Avebury in Wiltshire; but unfortunately a village has been planted on its site, and only a few slight remains now attest the rude magnificence of its perfect state. It was carefully surveyed by Dr Stukely in 1720. No fewer than 650 blocks of stone were included in the circles and avenues of this vast temple, varying from 5 to 20 feet above the ground, and from 3 to 12 feet in breadth and thickness. The singular structure formed by these huge standing-stones was enclosed by a deep ditch and a lofty bank of earth, of which considerable remains may still be traced. It enclosed an area somewhat exceeding twenty-eight acres. The stones of Avebury were entirely unhewn, and must have been brought together with much labour, frequently from a great distance. On the surface of the ground, both in the neighbouring valleys and on the high lands, larger masses of stone are frequently met with; and there are still a considerable number of detached oolitic sandstones of various sizes lying scattered about at no great distance from Avebury. These are known by the name of Gray Wethers, and from among such the builders of the great Celtic temple selected the materials with which it was constructed. Stukely remarks that Avebury might be regarded as the grand national cathedral, while the smaller circles, which are met with in various parts of the island, may be compared to the parish or village churches.

The vast Druidical temple of Stonehenge (see following fig.), on Salisbury Plain, has attracted more attention than any other relic of antiquity in Britain. It differs from that of Avebury, as well as from all the Celtic monuments of the same class, in being constructed of hewn stones, and manifesting ideas of proportion and regular symmetry of which no other known structure of the kind exhibits any indications. Many of the columns have been squared or hewn by art, and the horizontal stones which surmount the outer circle have been attached to them by mortices fitting the tenons

which have been laboriously cut on them. Readers who have not had an opportunity of inspecting this wonderful monument of antiquity, must not assume, from the above statements, that the huge monolithic

pillars of this temple of Stonehenge are characterised by great symmetry and uniform regularity of proportion. This is not the case. They have only been rudely reduced to the necessary form, but still sufficiently so to characterise them with a most striking and important feature of difference from all other known monuments of the same class, though we may be allowed to smile at the learned essay compiled by Inigo Jones, in obedience to the commands of King James, in which the great architect undertakes to prove that Stonehenge was a Roman temple of the Tuscan order, dedicated to Cœlus!

The origin of this singular structure has been the subject of endless speculations for centuries. The earliest-published notice of it occurs in the writings of Nennius, who lived in the ninth century. According to him, 460 British nobles, who had assembled on the spot to be present at a conference between King Vortigern and Hengist, were murdered there; and the Britons afterwards erected the circles of Stonehenge to mark the scene where so many of their chiefs had perished. This would place its erection later than the fifth century, and is altogether untenable. The 'Triads of the Welsh Bards' couple with King Vortigern the more famous Merlin; and this is further enlarged upon by Geoffrey of Monmouth, who wrote in the twelfth century. According to him, the stones were originally brought from Africa, and dropped at Kildare in Ireland, and from thence Merlin removed them by supernatural agency, and placed them upright on Salisbury Plain! By more recent writers all manner of vain theories have been propounded to account for the origin of this ancient British temple. It has been assigned to Phœnicians, Indians, Belgic and British Druids, Romans, and Saxons. This at least is obvious to the archæologist, that it belongs to a later period than the Great Temple of Avebury. Its hewn stones prove it to be the work of a period when the knowledge of metals had afforded the ancient Britons the means of effecting this. It is not, therefore, a work of the Stone Period—it is probably not even a work of the Bronze Period—but belongs to that later era when the art of smelting the iron ore had given to the northern races of Europe the command of weapons and implements adapted to their untiring energy and patient vigour. It is not improbable that the circle of unhewn stones which forms part of Stonehenge, may have been a lesser temple contemporary with that of Avebury; and that the great circle, and the other gigantic symmetrical features of the temple, were the work of a later age, and of a more advanced state of civilisation.

Personal Ornaments.

Many of the bronze weapons found in early tumuli are exceedingly elegant and graceful in form. The larger spear-heads are frequently decorated with open loops and borders on the flanges; and the bronze swords, generally known as the leaf-shaped swords, are remarkable for their beautiful proportions. In this country the blade alone is usually found, the handle having apparently been made of horn or some other decaying substance. But in Denmark the leaf-shaped sword frequently occurs with a beautifully-decorated handle of bronze. But it is to the personal ornaments of the same period that we must look for evidences of the greatest taste and skill. Many of these are of pure gold, and finished with much care. In Ireland more especially, beautiful gold brooches have frequently been found of large size, and decorated with amber and fine stones. Torques, or twisted collars for the neck, armillæ, or large bracelets, and rings of various forms, designed to be worn about the head, the neck, the arms, the wrists, the ankles, and even the waist, have all been found made of pure gold, of silver, and of bronze, and frequently characterised by great beauty of form and decorations. Besides these, bodkins, hair-pins, tweezers, and various other articles, occur among the metal relics of the period, while the contents of the same tumuli frequently include glass and amber beads, and arm-rings and necklaces made of coal and jet. The ornaments on all these furnish evidence of great skill and ingenuity, and prove their constructors to have made considerable progress in the arts of civilisation.

Perhaps the most remarkable of the personal ornaments of the Bronze Period is the torque, or twisted collar worn round the neck. (See annexed illustration.) It may be regarded as the most characteristic relic of advanced Celtic art; and, like the race to whom its construction is traceable, it is decidedly of Eastern origin. The gold collar which Pharaoh put round Joseph's neck, is rendered in the Septuagint by the word *strepton* (turned or twisted), and is supposed by some to have been a torque. The same species of personal adornment is of frequent occurrence on Persian monuments, and always under circumstances which imply its having been regarded as a mark of distinguished honour. It is particularly referred to in Kerr Porter's travels, as represented on the staircase of Persepolis, and forming one of the most prominent gifts offered to Darius. It was familiar to the Romans, but only as one of the barbaric spoils that adorned the procession of a triumphant general, or marked the foreign captive that he dragged in his reluctant train. It was recognised by the Romans as a distinguishing badge of the Gauls, and, as such, is introduced in 'that masterpiece of Otesilaus,' The Dying Gladiator, which Byron has inspired with such new and touching life in his poem of 'Childe Harold.'

III. THE IRON PERIOD.

The changes effected by the introduction of iron, to those already familiar with the use of copper and bronze, though considerable, would be slight and unimportant when compared with the radical improvements effected by the first discovery of metals. The evidence from which we may trace the first introduction of the commonest and most useful of all the metals to the races of northern Europe, is necessarily much more imperfect than that from which the previous conclusions have been deduced in relation to the Stone and Bronze Periods, owing to the rapid destruction of iron, unless under the most favourable circumstances. Nevertheless, we are possessed of abundant evidence to show that iron was in use among the races of northern Europe long before the Roman legions had subjected the Gauls and Britons to the imperial sway. The term, therefore, of the *Iron Period*, or *Iron Age*, very fitly suffices to designate the last period of heathenism, prior to the subversion of native arts and habits by the superior

prowess of Rome, and the influence of her more advanced civilisation and refinement.

The Museum of the Royal Academy at Dublin contains a valuable collection of iron swords, axes, and spear-heads, found at Dunshaughlin. They undoubtedly belong to a very early period, and their fine state of preservation is ascribed to the immense quantity of bones which surrounded them, the decomposition of which, by forming a phosphate of lime, prevented the rapid corrosion of the metal. Another beautiful collection of ancient iron weapons, believed to be Danish, was dug up near Island-Bridge during the construction of the Dublin and Cashel Railway. The mountings of the swords were mostly of brass, but a few of them were richly plated with silver, and one is said to have had a hilt of solid gold. In the celebrated museum of the Northern Antiquaries at Copenhagen, ancient iron swords and other hand weapons are preserved, some of which have the hilts ornamented, and partially inlaid with silver.

Numerous relics of various kinds might be added to those already described, belonging both to the periods of bronze and iron. The above, however, will suffice to characterise these periods, and to show with considerable vividness the degree of civilisation to which the inhabitants of northern Europe had attained before the irruption of the Roman legions into the countries within which these races had been securely established for many ages.

ROMAN ARCHÆOLOGY.

In treating of the relics which preserve to us the evidences of Roman arts and civilisation, the archæologist finds himself in an altogether new and clearer region. Here literature furnishes a safe and unerring guide. Inscriptions, names, and dates, fix the exact era to which each temple or palace belongs; or, with even minuter accuracy of detail, furnish the names of the cohorts of the Roman legions, and of the officers who led them into the various districts of each country which successive conquerors selected as the field of victory. Nevertheless, the archæologist is able to add much to the previous narratives of the historian, by his interpretation of the relics which are from time to time brought to light. The revelations of Pompeii and Herculaneum have given an insight into the domestic habits and social life of the ancient Roman, such as no study of classic literature could furnish. The study of Roman antiquities, however, is still more interesting and instructive when it forms a portion of the early history of the nations subjected to imperial sway.

ROMANO-BRITISH PERIOD.

The investigation of the antiquities of the Romano-British Period forms a most important branch of inquiry in searching into the early history of Britain. By this means we are able to trace the first introduction of many of the arts which superseded the ruder devices of the ancient Britons, and still minister to our social comforts and personal enjoyments. To the Romans we probably owe the first manufacture of bricks and tiles, and the great step in advance of the rude habits of a people scattered amid the forests of a thinly-peopled country, consequent on their gathering into large communities, and building substantial dwellings, in imitation of their conquerors. Luxury, tempered by the disciplined hardiness of soldiers, soon created new wants, and incited many dormant faculties into action. The Roman mansion, with its baths, its flues and stoves, its mosaic paving and painted walls, its sculptures, bronzes, and furnishings, all opened up new sources of wonder and of knowledge to the intelligent barbarians who had in vain withstood the legions of Cæsar. The ancient British pottery is found to have altogether disappeared on the introduction of Roman arts. The rudest fictile vessels of the Romano-British Period may be distinguished at a glance from those of the native period. They are essentially different in form, and much superior in manufacture—the Britons having learned from their conquerors the art of constructing and efficiently using the potter's kiln.

The forms of Roman weapons and implements, and of every variety of domestic utensil or personal ornament, were no less markedly distinguished from those of the native British. They were not simply superior to them: they were essentially different in form and style, and superseded them as a natural consequence of the substitution of Roman for native rulers. Numerous sepulchral and commemorative inscriptions have been discovered in every part of Britain where the Romans established permanent stations. Inscribed altars are also of frequent occurrence, and all these afford valuable materials for the historian. They furnish unmistakeable evidence of the state of the arts at different periods prior to the decline of the Roman Empire, and their final abandonment of Britain. They also suffice to show the nature and extent of the Roman works executed under the various commanders who ruled the destinies of Britain at that important era of its social pupilage.

The Newcastle Museum is exceedingly rich in Roman remains, and particularly in inscribed tablets and altars, owing to its vicinity to the Wall of Hadrian and Septimius Severus. The Hunterian Museum at Glasgow is also enriched with a valuable collection of a similar nature, derived in like manner from its vicinity to the Wall of Antoninus. From both of these collections, curious and minute information has been furnished to the historian, showing what legions occupied the country and constructed the works, which still leave enduring traces of their presence after the lapse of fourteen centuries. Legionary inscriptions have also been found on tiles. At York they have been discovered in great numbers, stamped with the inscriptions of the sixth and ninth legions; and in London, though more rarely, bearing an abbreviated inscription, which is rendered—*The First Cohort of Britain, in London.* It thus appears that the Roman soldier was not only employed in constructing military works, but was engaged in useful manufactures, so that he became the instructor, as well as the conqueror, of the subject Britons.

The miscellaneous remains of the Romano-British Period embrace an immense variety of articles, a mere enumeration of the names of which would answer no useful purpose. London and York have proved peculiarly fertile in the disclosure of such relics of the conquerors of the world, and, more recently, no single locality in England has furnished so interesting a variety as Colchester. In digging a foundation there in the year 1821, for enlarging the public hospital, a singularly-interesting and novel piece of Roman sculpture was discovered. It consists of a sculptured figure of a sphinx, twenty-five inches in height, seated, and holding between its fore-paws the head and other remains of a human being, who has fallen victim to the wiles of this singular creation of classic fable. A considerable quantity of pottery, tiles, and fine-glazed ware were dug out of the same locality. Two fragments of Roman inscriptions were likewise found there, and a small bronze figure of the sphinx. Since then, Roman remains of various kinds have occasionally been turned up, until the present year (1849), when further extensive excavations have led to the discovery of a most valuable collection of pottery, and other relics of Roman art; which have been preserved to form the nucleus of a local museum, devoted chiefly to the antiquities of the county of Essex.

ANGLO-SAXON PERIOD.

The Anglo-Saxons succeeded to the occupation of Britain after its desertion by the Roman legions, on the decay of the Empire; and under them Britain once more underwent new and important changes. In some respects it returned to ancient manners: the classic mythology gave place to the northern deities of the Scandinavian and Teutonic creeds: the arts assumed a new form, in which the elements both of Scandinavian and Roman models are combined. Among the contents of Anglo-Saxon tumuli, glass vessels and

drinking cups frequently occur. Many of these are formed so as not to admit of their being set down unless when empty, and have been thought to furnish a curious illustration of the habits of our Saxon forefathers, among whom the vice of hard drinking is known to have been so common. Pottery, arms, and implements of various descriptions, are all frequently found among the contents of the Anglo-Saxon barrows; but perhaps the most interesting class of relics belonging to this period is the personal ornaments, which include enamelled and jewelled fibulæ, rings, necklaces, crosses, &c. The most characteristic ornament of this period is the *Runic Knot*, a species of interlaced ornament, which continued in use, with slight variations, till the twelfth century, and is frequently found among the decorations on the earliest ecclesiastical edifices belonging to what are commonly styled the Saxon and Norman, or Byzantine, Periods of Architecture.

The introduction of the cross among the personal ornaments of the Saxons points to the remarkable change effected by the introduction of Christianity. The Roman missionary and the Roman monk succeeded to the conquests of the Roman legions, and triumphantly planted the cross where the imperial eagle had only gained a temporary and disputed possession. Thenceforth the influence of the creed and of the ecclesiastical polity of the Christian missionaries manifested itself in every phase of social life, and revolutionised the arts no less than the morals and manners of the Anglo-Saxons. One counteracting influence, however, long continued to hold them in check. The Danish and Norse rovers, who won to themselves the name of the Sea-Kings by the daring hardihood with which they steered across the ocean, and enriched themselves with spoils gathered along the whole northern and western coasts of Europe, made frequent descents on the eastern shores of England and Ireland. Many relics of these barbarous invaders have been met with from time to time, contrasting with the more familiar productions of native art and skill. Several long and straight swords, with hilts altogether differing in form and ornaments from those usually ascribed to the Anglo-Saxons or native Irish, are preserved in the Museum of the Royal Irish Academy, and are regarded by most intelligent antiquaries as relics of these Norse invaders.

Ancient Chessmen.

Another and very characteristic class of relics of the Sea-Kings, is the dice and draughtsmen frequently found along with more warlike remains, and serving to illustrate the love of gambling for which these wild Norsemen were notorious. They are exceedingly common in Denmark, and have been frequently found in Ireland, generally consisting of a conical-shaped bone, with a hole in the bottom, designed, as is presumed, for use on shipboard, to beguile the tedium of their long sea-voyages, the hole being intended to fit on to a pin, so as to keep them from slipping with the motion of the vessel. Of the same class, though belonging to a later period, are the ancient chessmen, wrought of the teeth of the walrus. Large sets of these have occasionally been discovered, possessing great value from the illustrations they afford of ancient costume. The frequent occurrence of the bishop among these latter figures, fixes them as belonging to a period subsequent to the introduction of Christianity. In the year 1831 a number of these ancient chessmen, beautifully carved with a rich variety of ornaments, were discovered in the island of Lewis, buried fifteen feet under a bank of sand. They were purchased by the trustees of the British Museum, and now form a part of that valuable national collection. In the 'Guide to Northern Archæology,' published by the Society of Northern Antiquaries of Copenhagen, woodcuts are given of specimens of sets of ancient chessmen found in Denmark; exactly similar in character to those so recently discovered in the islands of Scotland.

The arts, the arms and implements, and the architecture of the mediæval Christian era, all come within the province of the archæologist; but they demand a much larger space for their consideration than a popular sketch of the science can possibly include. (See Nos. 26 and 58.) One class of antiquities, though not the most pleasing, may be selected from these, as peculiarly illustrative of the manners and the degree of civilisation of the period—that is, the

Engines of Torture, &c.

The use of torture as a means of obtaining judicial evidence cannot be regarded as a creation of the Middle Ages, seeing that it was in use both among the Greeks and Romans. Torture was used, according to the Athenian laws, in eliciting evidence from slaves, and is affirmed by Cicero to have been legally applicable to Athenian citizens. It is doubtful if it was used by the Romans during the period of the Republic, but it had come fully into use in the time of the early emperors, and was subjected to scarcely any other restraint than the will of the despotic rulers of Rome during the later era of the Empire. Among the northern nations, however, whose manners and early civilisation have been traced through the remote eras to which archæologists give the names of the Stone, Bronze, and Iron Periods, the use of torture in judicial proceedings appears to have been unknown. This cannot be ascribed to any superiority of the northern races in refinement or humanity when compared with the polished Greeks and Romans. The barbarous cruelties of the Sea-Kings especially are only to be equalled by the proceedings of the savages of Polynesia or North America. But among the whole northern races, the Teutonic and feudal appeal to ordeal or battle, appear to have existed under some modified form, from the earliest times, as judicial tests, which were rendered infallible by their supernatural character. So long as this *judicia Dei*, or judgment of God, as it was termed, continued in use, we have no evidence of torture being resorted to; and among the Germans more especially, where the Teutonic customs and influences were most strongly rooted, judicial torture appears to have been unknown till the close of the fourteenth century.

The engines employed in the infliction of torture have been as various as the inventive ingenuity of man is fertile in device. The monks, under the influence of a misdirected zeal for the attainment of a holy life, and securing a claim to heaven by their own good works, devised penances, mortifications, and austerities, which were directed only against themselves. In the thirteenth century we find the first traces of the use of torture for inquisition of heresy introduced into ecclesiastical law. While the Church exercised so beneficial an influence in softening the barbarism of the northern races, and ameliorating the condition of the people under the lawless tyranny of the feudal system, she appears as the introducer of this barbarous practice at a period when civil institutions and equal laws were rapidly displacing the ruder customs of feudal supremacy. In the great struggle between the Pope—Clement V.—and the Templars in 1310, inquisitors were appointed to examine the knights charged with heresy. The Archbishop of York, one of the inquisitors, hesitated to make use of torture in the investigation; and in consequence of his doubts, Edward II. refused to permit its application to the accused. On learning of this interference, Clement wrote a letter of remonstrance to the king; and after considerable hesitation he submitted, by advice of his council, and a precept was issued to the sheriffs of London, who had the accused in charge, to suffer the inquisitors to examine them by torture. From this it is obvious that until the fourteenth century torture was unknown in England, either as a royal prerogative or an instrument of judicial inquiry. Edward II., the wretched king who thus first sanctioned the use of this terrible engine of inquisition in England, himself perished by torture in 1327, by the hands of two ruffians to whom his own queen, Isabella, the 'She-Wolf of France,' had consigned him for that purpose.

The iron cage was an instrument of torture in frequent use by the cruel and superstitious Louis XI. of France. In this the wretched captive could neither stand up nor lie down at full length, and yet some of the victims of the tyrant survived for years in this horrid durance. Somewhat analogous to this were the irons frequently used by ecclesiastical inquisitors, and which formed part of the missionary furniture of the Spanish Armada, by means of which the sufferer was bound with his neck, arms, and knees drawn together. It is a curious fact that this same dreadful posture of enforced constraint was resorted to by the pilgrim fathers of New England as the readiest mode of judicial punishment. The award to the earliest culprits of that settlement is to be bound neck and heels together, and to be left in that state without any food for twenty-four hours. The culprits had been convicted of fighting a duel, and the verdict was put in force; but their sufferings were so great, that they were released after having borne only a portion of their appointed punishment.

The rack was the commonest engine of torture throughout Europe, both in ecclesiastical and civil investigations. It is said to have been introduced into the Tower of London by the Duke of Exeter in the reign of Henry VI., and thence obtained the name of the Duke of Exeter's daughter. This device was improved upon for its horrible purpose in the reign of Henry VIII., by Sir William Skevington, lieutenant of the Tower; and it is by a popular corruption of his name that the most dreadful engine of this kind ever used in England obtained its familiar title of the Scavenger's Daughter. It was discovered by a committee of the House of Commons, who had been appointed in the year 1604 to investigate some parts of the Tower, and especially the ancient dungeon of torture called 'Little Ease.' Besides the rack, a variety of instruments of torture were used in England, such as the gag, thumbscrews, pincers, manacles, fetters, &c.; to which list may be added the mutilations and the pillory of the Star Chamber and High Commission Court of the Stuarts.

Both in English and Scottish history many examples occur of the use of torture, as a barbarous means of revenge either on a captive enemy or a great criminal; and some relics of this are still found in the punishment which the English law awards to the crime of high treason. In 1438 the murderers of James I. of Scotland were put to death at the Cross of Edinburgh with the cruellest tortures that the ingenuity of a barbarous age could devise. The Earl of Athol, after having his flesh lacerated with pincers, and torn with heated irons, was elevated on a high pillar in sight of the people, and crowned in derision as the king of traitors with a red-hot iron crown. The use of torture in judicial investigations was continued in Scotland long after it had been abandoned in England; and James II. acquired peculiar infamy for the use he made of this dreadful means of oppression against the Scottish Presbyterians during his government of Scotland under Charles II. The instruments chiefly employed for this purpose were the 'boots'—which consisted of an iron case drawn over the leg, between which and the flesh wedges were driven in with a hammer—and the thumbkins, which were applied to the thumbs, and tightened by screws, sometimes till the bones were crushed under the merciless infliction.

Along with the relics of a barbarous age just described, the instruments anciently in use for capital punishment may be classed. The guillotine, which has acquired for its improver—Joseph Ignace Guillotin, a physician of France—an unenviable celebrity, was in use long before, under other names, in Germany, Bohemia, Italy, England, and Scotland. In Germany it bore the characteristic name of *Falbiel*, or the Falling Hatchet; in Scotland it was known by the singular title of the *Maiden*. Tradition assigns the introduction of this instrument into Scotland to the Regent Morton, who was one of its early victims; but it is proved to have been in use some time before his regency. The original instrument of capital punishment, by which many of the most eminent men in Scotland were beheaded, is still preserved in the Museum of the Society of Antiquaries of Scotland, at Edinburgh. It consists of two upright beams, with a groove in each, between which an iron axe, loaded with lead, is moved up and down by means of a rope passing over a pulley at the top; a third beam projects behind, to which an iron trigger is attached. On this the rope was secured by a loop, and the executioner released it by a stroke of a mallet, and let it fall by its own weight on the neck of the criminal. Halifax in Yorkshire was the only place in England where a similar instrument was ever used; though the scenes of butchery frequently enacted on Tower Hill and elsewhere, through the tremor or inefficiency of the executioner, prove that the guillotine was a merciful improvement on the axe of the headsman. In France, the improved instrument of its ingenious physician still remains in use for the execution of criminals. It would be an excessive refinement of criticism to pronounce it a more barbarous engine of death than the gallows and the halter, though its terrible associations with the victims of the Reign of Terror might furnish a very sufficient reason for its disuse in the most polished nation of modern Europe.

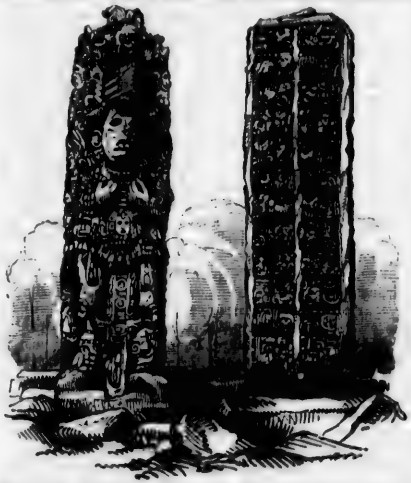
AMERICAN ANTIQUITIES.

The antiquities of the New World occupy a place in the investigations of the archæologist altogether apart from every other branch of his studies, though the very recent date of the discovery of the great continents of North and South America only renders more interesting whatever is calculated to throw light on their previous history. America has its Stone Period as well as Europe and Asia. Tumuli, the burial mounds of ancient races, are found in many parts of North America, containing spear-heads and adzes of flint and stone, and urns of rudely-baked clay, not greatly dissimilar to those found in the barrows of Wiltshire or in Denmark and Brittany. This, however, can hardly be regarded as furnishing conclusive evidence of early intercourse or a common origin, since it only exhibits the relics of that primitive stage of society through which the most civilised nations of antiquity appear to have passed. The Society of Northern Antiquaries of Copenhagen published in 1837 a work of great learning and research, entitled 'Antiquitates Americanæ,' designed to furnish evidence of the discovery of the American continent by the Norsemen several centuries before the voyages of Columbus. In one of the communications furnished to the antiquaries of Copenhagen by the secretary of the Rhode-Island Historical Society, it is remarked:—'In the western parts of our country may still be seen numerous and extensive mounds, similar to the tumuli met with in Scandinavia, Tartary, and Russia; also the remains of fortifications that must have required for their construction a degree of industry, labour, and skill, as well as an advancement in the arts, that never characterised any of the Indian tribes. Various articles of pottery are found in them, with the method of manufacturing which they were entirely unacquainted. But, above all, many rocks inscribed with unknown characters, apparently of very ancient origin, have been discovered, scattered through different parts of the country, such as it was impossible so to engrave without the aid of iron or other hard metallic instruments.' Of several of these rocks engravings are given; and while some are in rude and unknown characters and hieroglyphics, others are unquestionably engraved in Runic characters, corresponding to the ancient monuments of Northern Europe.

It is in the southern parts of the North American continent, however, that the most interesting evidences of ancient manners and the arts of civilisation are to be found. Allusion has already been made to the pyramids of Mexico; but besides these, ruins of great extent and considerable variety of design still attest the magnificence of the ancient kingdom of Montezuma. Many of the older and more important monuments re-

maining in Mexico are regarded as the work of a still earlier race than that which gave way before the fierce soldiers of Cortes—probably of the Toltecas—but the inquiry is still involved in considerable obscurity, and would require to be discussed at considerable length with any hope of further elucidation.

Much new interest has been conferred on the subject of Mexican antiquities by the publication of Stephens's 'Incidents of Travel in Yucatan.' This enterprising traveller, after exploring many new regions of Central America, had his attention drawn to Yucatan by accounts he received of ancient ruins of great extent which lay buried in the vast forests with which nearly the whole of that country is covered. On exploring these his highest expectations were gratified. In the narrative of his travels he gives an account of visits made to forty-four ruined cities, many of them containing extensive remains of temples and palaces still covered with sculptures, and frequently adorned both with paintings and hieroglyphics. Mr Stephens's work possesses a further value from being adorned with numerous engravings of these gigantic memorials of an ancient race—engravings from which we reduce the annexed illustration exhibiting the front and back of a



stone idol found at Copan. In their mode of structure or the details of their decoration, there is nothing which suggests any resemblance to the ancient monuments of any people of the old world. They appear to have been the unaided creations of national genius among the ancient Indian races; and Mr Stephens considers—notwithstanding the degradation to which the Indian natives of Yucatan have been reduced under the domination of their Spanish conquerors and priests—there is no reason to doubt that they are the descendants of the builders of Uxmal and Kabah, though no tradition has survived to connect them with so honourable an ancestry. A very large portion of the country lying between the Bay of Honduras and the Gulf of Mexico still remains unexplored. Considerable parts of Central America, and a great proportion of the southern continent, are equally unknown. Beyond the intricate forests that bound the known regions of Yucatan, or even within their recesses, vaster and far more interesting ruins may lie buried, nor is it at all impossible that Indian cities may still remain in the possession of their native occupants, and temples exist there where the ancient idols of Mexico and Yucatan are still worshipped by races who only know of the existence of the white man by some vague and uncertain tradition, borne to them by a stray wanderer from the regions conquered by the early adventurers of Spain.

It is worthy of notice, that among the sites of the ancient temples and ruined cities of Mexico and Yucatan, tumuli occur of the same character as those which in other places of the world indicate to us the primitive habits of the human race, ere the arts of civilisation have modified this character into the manifold peculiarities of distinct nationalities. During the visit of Mr Stephens and his companions to the village of Chemaz, while travelling through Yucatan, the cura informed them that at some leagues distant, nearer the coast, were several mounds or tumuli. The Indians had been employed shortly before in digging and excavating in the neighbourhood of them for stones for building; and on chancing to dig into one of the tumuli, they uncovered three skeletons, all in a state of extreme decay, which, according to the cura, were those of a man, woman, and child. At the heads of the skeletons were two large vases of *terra cotta*, with covers of the same material. In one of these was a large collection of Indian ornaments—beads, stones, and two carved shells. The other vase was filled to the top with arrow-heads, made of obsidian, most probably the work of the ancient Mexicans, in whose country volcanic regions abound. Besides these, Mr Stephens was struck by being shown a penknife found in the same tumulus, and which he regarded with peculiar interest as a memorial of the European discoverers of Yucatan, and an evidence of the probable date of the tumulus. 'Speculation and ingenuity,' says he, 'may assign other causes; but in my opinion the inference is reasonable, if not irresistible, that at the time of the conquest, and afterwards, the Indians were actually living in and occupying those very cities on whose great ruins we now gaze with wonder. A penknife—one of the petty presents distributed by the Spaniards—reached the hands of a cacique, who, far removed from the capital, died in his native town, and was buried with the rites and ceremonies transmitted by his fathers.' The accounts of the Spanish conquerors describe the Indians as opposing them with wooden swords, and the like imperfect and primitive weapons of war. Among them, therefore, the spear and arrow-heads of flint and obsidian are likely to have been in use; but such instruments would be utterly inefficient as tools for sculpturing the temples and palaces of Yucatan; and we must therefore either regard the latter, like those of Mexico, as the works of an older and superior race, or question the inference which derives from the discovery of the knife—evidence of the tumulus being contemporaneous with the era of the Spanish invasion.

In the course of the preceding sketch, the reader can hardly fail to be struck with the uniform characteristics which are found to belong to the human race in the primitive stages of society. In Egypt, on the banks of the Euxine, along the shores of the Mediterranean, and throughout the whole northern regions of Europe, we discover evidences of a primitive state of society, through which the races occupying these different localities have passed to higher states of civilisation. In the new world the same tokens of this rudimentary stage of social life meet us, alike in the forest regions of the Red Indian savage, and in the southern parts of the same great continent, where the Spaniards found cities and temples that gave evidence of high civilisation and considerable progress in the useful and ornamental arts. Modern voyagers have found the natives of the South Sea Islands living in the state of society to which these memorials of extinct races point. By such comparisons, therefore, archæological studies open up to us a most interesting and instructive chapter in the history of man. They disclose to us an era hitherto almost unknown to the historian; and, enabling us to start from a well-defined stage of life in the infancy of the social state, they lead us, by a satisfactory chain of evidence, to the period when complete and trustworthy historic records render the investigations of the antiquary and the inductions of the archæologist no longer necessary for the discovery of truth.

RHETORIC AND BELLES LETTRES.

Rhetoric is a branch of knowledge and practice having reference to spoken and written compositions, and to the means of employing language so as to produce its greatest possible effect on the minds of men. While the rules of grammar are intended to secure correctness and uniformity in inflecting words, and in joining together the parts of speech in sentences, according to the established usages of each separate language, Rhetoric considers the meaning and form of the composition, and the total effect upon the persons addressed.

Belles Lettres, or Polite Literature, expresses a class of literary productions whose subjects are the principal matters of human interest occurring in the world, and which are adorned with the utmost elegance and polish of style and treatment. They correspond to what is universally interesting—the conversation of the most cultivated classes of society. The chief works contained under this branch of composition are the productions of the poetic art, together with prose narrations, expositions, and criticisms, in reference to nature and human life; including histories, annals, and biographies; discussions of the doctrines bearing on human welfare; criticisms and judgments of the characters, works, and ways of men, calling forth the attendant emotions of reverence, admiration, esteem, love or hatred, sympathy or antipathy. The greater portion of our periodical literature comes under this head. Such productions are contrasted with works of science; for these are supposed to inform us, once for all, on some branch of nature; whereas works of literature are intended to supply an undying appetite for intellectual and emotional excitement.

The following may be regarded as the leading varieties of address that come within the province of Rhetoric, as above defined:—

1. The simple forms of establishing a common understanding between man and man; the word of command, the phraseology of direction, intreaty, question, answer, acquiescence, refusal, co-operation, resistance, concurrence, opposition, and the like.
2. The communication of thought, information, ideas, and sentiments, or of the more permanent products of intellect which are comprehended under the terms knowledge and science.
3. Persuasion, or the means of inducing men to act as we wish, not by external compulsion, but through their own dispositions and impulses.
4. The productions of poetic and literary art.
5. The giving vent or expression to individual feelings, for the relief or gratification of the inward states of our being.
6. The modes of cultivated address employed in the refined intercourse of life.

Before touching in detail upon these various heads, it may be convenient to discriminate and discuss

THE ATTRIBUTES OF STYLE IN GENERAL.

The leading attributes of style that are of a Rhetorical kind may be set forth under the following heads; it being assumed that grammatical and idiomatic purity and correctness have been previously secured by the appropriate means:—

Simplicity.

By Simplicity we are to understand what is easily comprehended, or what is level to the ordinary capacity of men. It is opposed not so much to the complex as to the *abstruse;* and implies a mode of address that does not require severe effort, or a special training for its comprehension. The possibility of being simple in this sense will of course depend much upon the subject matter; but we can nevertheless consider, in general, what things are requisite to bring out the quality.

Simplicity is twofold—simplicity of terms, and simplicity of structure.

Terms are simple, in opposition to abstruse, on various grounds:—

1. They may be the names of common and familiar objects and actions, instead of such as are rare or remote. 'He that doeth these sayings is like to a man that buildeth his house upon a rock;' in this sentence every one of the terms has the simplicity that attaches to meanings common and familiar. Objects of a *technical* description, or such as come under the notice of only limited classes of people, cannot enter into simple composition.

2. The terms may relate to things that are in their nature palpable and conceivable, rather than obscure or invisible. The world is partly made up of objects of a kind to act upon all our senses, such as the solid masses that support and surround us; and partly of subtle and impalpable agents, like electricity, or the mysterious attractions and repulsions that keep up the activity of the sensible masses. Now, all references to the one class of things is universally intelligible, while allusions to the others are understood only by such as have received the artificial training necessary to grasp them. The common objects of the landscape are simple in this sense: the discussions about gaseous bodies, gravity, elasticity, vitality, and the like, are necessarily abstruse.

3. What are called *concrete terms* are, in general, more intelligible than the names of *abstractions.* A concrete object is a thing as it exists in nature, with all its parts and peculiarities—such as a mountain, a river, a metal; while an abstraction is some property of these artificially conceived apart from the rest—such as height, density, velocity, liquidity, lustre, specific gravity. Now the gross object is usually more conceivable by the mind than its separate properties; hence although this abstract mode of viewing things is essential to the thorough comprehension of the world, yet for popular composition the terms of the other class are more suitable. There is, however, the greatest possible difference in the intelligibility of abstractions: while some are within the reach of the least cultivated minds, others, such as the subtlest ideas of mathematics, chemistry, and physiology, presuppose a long course of laborious studies. Height, depth, strength, whiteness, virtue, are popular abstractions; polarity, infinitesimal, ellipsoidal, express notions that can never enter into popular composition.

4. Of abstractions, some are fictitious and untrue to the nature of things, being the premature efforts of men to get at the secrets of nature; while others are sound and valid generalisations, and are therefore likely to coincide better with our experience. In general, the ill-formed abstractions will be the most difficult to comprehend. The epicycle orbs of the planets were less conceivable than the ellipses which are their accurate path. The imaginary element 'phlogiston' gave a far less clear and simple idea than is now possessed of the action of burning. But, on the other hand, shallow explanations of natural phenomena may be more conceivable than the true. Descartes's whirlpools of ether rendered the account of the heavenly bodies more level to the popular understanding than did Newton's centripetal and centrifugal forces.

The progress of accurate thinking necessarily leads to a corresponding improvement in the simple and accurate composition.

Simplicity of structure means such an arrangement of terms in clauses, and of clauses in sentences, as renders the meaning comprehensible without severe attention

or special study. When the clauses succeed one another in the exact order in which the ideas can be best apprehended; when what is necessary to complete a meaning is not too long delayed, nor interrupted by other distracting meanings; when only a moderate number of particulars is required to make up one complete statement; and when no circumstances are present to produce complexity, distortion, confusion, or overloading—the structure is likely to be simple. The difficulty of attaining simplicity of structure arises from the nature of the subject: the stream of composition can consist of only one thread, whereas it may be desirable to narrate a complex tissue of events, or to represent a number of things all happening at once, as in historical composition. In such cases the skill and art of the writer are shown by his being able to embody his matter in a series of clauses and sentences where the particulars are arranged without perplexity. Short sentences are necessarily simple; long sentences may be either simple or not. Some writers, such as Addison, Bolingbroke, Johnson, Hall, who use long sentences, construct them nevertheless with great simplicity of arrangement; others, of whom Milton is the most remarkable example, delight in a highly-involved and complex kind of composition.

Clearness.

This attribute is opposed to indistinctness, faintness of meaning, vagueness, ambiguity, uncertainty. It implies that the forms and images presented to the view shall be sharp, clear, and unmistakeable. It is a merit that cannot belong to the style, if not first possessed by the thought; but it is possible that the clear thoughts of one man may not be clearly conveyed to another man. As already observed on simplicity, clearness depends partly on the terms and partly on the structure. Not only must terms be used that express well-ascertained and certain ideas, but they must be so joined that the result shall indicate only one meaning. Since many words have more than one sense, it belongs to the composition to join them together, so that every interpretation shall be excluded except the one intended. To effect this, in treating difficult subjects, is nearly the hardest task that occurs in composition. In poetry, Homer and Dante are remarkable for the surpassing clearness of their images. In prose exposition, Hobbes is a pre-eminent example.

Strength.

Strength, vigour, and force are attributes of style, as well as of every other form of human activity

This quality must mainly depend upon making choice of such terms as by their sounds, or by the images associated with them, echo the powerful objects and actions of nature or of human life. The effect of employing, as illustrations, the mighty agencies of the thunder, of the ocean, the cataract, the wild beast, and the like, is known to every one.

Strength is likewise produced by the use of language strongly suggestive of the circumstance and detail of actions and events, in place of their weak generalities. Thus, when we speak of killing or taking away life, the effect is very feeble; but when the specific act of violence is alluded to, as 'The men whose daggers stabbed Cæsar!' a far stronger impression is conveyed.

Apart from the choice of terms, the quality of strength is brought out by peculiarities of structure and arrangement. The placing of the forcible word of a sentence in the position of natural emphasis adds to the effect—as '*Great* is Diana of the Ephesians.' The figure of interrogation has also a striking effect—'Breathes there a man?' and so forth.

In general, brevity is a feature of strength; it is hardly possible, by a diffuse verbosity, to give an energetic impression, whatever other beauties may be embodied upon that kind of style.

Milton is perhaps the greatest example of the quality of strength that the English language presents; for although Shakspeare produces strokes that could hardly be surpassed, it is a sustained peculiarity in the writings of the author of 'Paradise Lost.' English literature abounds with energetic compositions: the well-known names of Barrow, Bacon, Dryden, Pope, will present themselves to most readers.

Liveliness, vivacity, animation, express a mode of strength or energy, and depend in the very same manner upon the choice and arrangement of terms.

The most difficult variety of style under this head is what is called soaring or taking a flight, which must be carefully managed, so as to avoid a break, a fall, or, technically—a *bathos*. Our greatest poets and prose writers have furnished successful instances of this quality: it is also a frequent accompaniment of the higher kinds of oratory.

The following passage from Dr Chalmers, on the past eternity, is a good illustration of a lofty flight powerfully sustained:—

'One might figure a futurity that never ceases to flow, and which has no termination; but who can climb his ascending way among the obscurities of that infinite which is behind him? Who can travel in thought along the track of generations gone by, till he has overtaken the eternity which lies in that direction? Who can look across the millions of ages which have elapsed, and from an ulterior post of observation look again to another and another succession of centuries; and at each farther extremity in this series of retrospects, stretch backward his regards on an antiquity as remote and indefinite as ever? Could we by any number of successive strides over these mighty intervals, at length reach the fountain-head of duration, our spirits might be at rest. But to think of duration as having no fountain-head; to think of time with no beginning; to uplift the imagination along the heights of an antiquity which has positively no summit; to soar these upward steeps till, dizzied by the altitude, we can keep no longer on the wing; for the mind to make these repeated flights from one pinnacle to another, and instead of scaling the mysterious elevation, to lie baffled at its foot, or lose itself among the far, the long-withdrawing recesses of that primeval distance, which at length merges away into a fathomless unknown; this is an exercise utterly discomfiting to the puny faculties of man.'

Feeling.

This term is used here in a restricted sense, to express the quality of touching the warm feelings, affections, and tenderness of humanity. It involves the use of phrases to suggest genial and homefelt attachments and associations—family, country, friends, and all the force of sentiment that is wound up in the sociability of our nature. There are a certain number of the relationships of life founded upon natural tenderness, and the terms expressing them naturally come to excite a certain glow of this feeling when they are properly used. Child, parent, fatherland, native country, are all terms suggesting tender emotion; and there are an infinity of occurrences in life that involve this class of phrases; and according as they are employed with skill and keeping, in any kind of composition or address, the style is said to possess feeling. The addresses of the pulpit usually aim at this peculiarity, which serves both to gratify the hearers with warm emotion, and to act as a stimulus to a certain course of conduct. The closing words of the twenty-third Psalm are singularly replete with feeling: 'Surely goodness and mercy shall follow me all the days of my life, and I shall dwell in the house of the Lord for ever.'

It necessarily happens that the native terms of the English language, which were formed and fashioned by the native English heart, are more impressive than the phraseology of foreign natures and remote climates, such as the Latin, Greek, and French portion of our language. But the cultivation of our schools and colleges has made foreign idioms, and the associations and history of ancient and distant nations, as full of tenderness and warmth to the educated classes as any of

our native compositions. The effect of this, however, is to constitute two different kinds of style: the homely and the popular on the one hand, and the learned and classic on the other. The wide interval that may separate these two styles can be judged of by comparing the 'Pilgrim's Progress' with the 'Paradise Lost.'

Expressiveness.

This is a quality of style resulting from the power of words to echo by their sound and mechanical effect the meaning or sentiment that they are intended to convey. The suiting of the sound to the sense gives additional weight to the meaning, and therefore furthers the main object of the address. Many of the words of our language have a natural expressiveness, and they may be so joined in composition as to have an expressive structure. Pope has been admitted to have been often very happy in bringing out this quality. The following is an example:—

> 'If nature thundered in his opening ears,
> And stunned him with the music of the spheres,
> How would he wish that heaven had left him still
> The whispering Zephyr and the purling rill!'

Expressiveness is often preferred to elegance, as in cases where some coarse phrase carries with it a vigorous meaning. No one would object to Cromwell's saying of his Protectorate, that it was a device that had been before resorted to 'when this land was under the like hurliburlies.'

Freshness.

This much-desired quality in all things presented to the senses or the mind of man may belong in very unequal degrees to modes of address. It is produced partly by mere novelty; partly by what, although not new, is in permanent contrast to routine or commonplace; partly by what is genial, loving, and hearty; and partly by high and consummate art. There are compositions which are fresh for the hour, and others that are so to every new generation. It is indeed possible to render the greatest compositions stale by harping too much upon the letter of them; but when moderately enjoyed, the creations of Homer, Aristophanes, Chaucer, Shakspeare, or Goethe, have an everlasting relish. The freshness of loving warm geniality attained its perfection in 'Don Quixote,' which will remain an eternal example of the qualities that make either a man or a book universally agreeable. Addison and Cowley are examples of the same fine-toned style of thought and feeling.

The revelations of the mystery and workings of nature break out with perpetual freshness upon the mind, just as its scenic beauty is a charm to every new-comer. Hence scientific compositions have all the delight of novelty at their first perusal. In like manner the practical devices of human life, the machinery, apparatus, and inventions of man for overcoming nature and organising human society, are a source of similar interest. The works that describe the ongoings of distant countries, as well as those relating to past ages, have the advantage that newness and strangeness of matter give to literary compositions; but in such cases the subject-matter, rather than the style, is the source of interest.

All expressions and descriptions that direct the view upon the outer world, have a healthier and fresher action on the mind than such as relate to inward feelings and emotions, or require an introspective effort. Self-consciousness, although as necessary in human life as sight or hearing, is naturally a weakening and debilitating action, and should be exercised only in a small proportion to the efforts of outward attention and regard. Shakspeare's description of Dover Cliff contains some examples of the inward or subjective reference, which will serve to illustrate what is here meant by it:—

> 'Come on, sir; here's the place—*stand still. How dreadful*
> *And dizzy 'tis to cast one's eyes so low!*
> The crows and choughs, that wing the midway air,
> Show scarce so gross as beetles. Half-way down
> Hangs one that gathers samphire: dreadful trade!
> Methinks he seems no bigger than his head!
> The fishermen that walk upon the beach
> Appear like mice: and yon tall anchoring bark
> Diminished to her cock; her cock, a buoy,
> Almost too small for sight. The murmuring surge,
> That on the unnumbered pebbles idly chafes,
> Cannot be heard so high. I'll look no more,
> *Lest my brain turn, and the deficient sight*
> Topple down headlong.'

A combination of freshness, animation, and ease, will produce what is called the *light* in style, so much desiderated by all who aim at securing the patronage of the reading public.

The group of qualities next to be discussed, which allude to the various kinds of artistic effect, likewise contribute essentially to the result that we have last been considering.

(Taste, Elegance, &c.)

The qualities of Taste, being qualities superadded to the conveyance of meaning, are the secondary attributes of compositions whose object is to give direction or information, although they are the principal characteristics aimed at in the poetic and literary art. They are intended for the immediate gratification of a wide surface of varied human susceptibility, while the other purposes of speech relate to the practical ends of life, which may not be capable of taking on forms calculated to give artistic enjoyment. Neither elegance nor sublimity of expression is sought for in an act of parliament or a deed of conveyance.

The artistic qualities of style may be illustrated under the following heads:—

Melody.

The melody or music of articulate speech arises from the proper choice and ordering of melodious words and phrases. Certain combinations of letters have a more musical effect upon the ear than others; and the due alternation of long and short, emphatic and unemphatic syllables, under the guidance of an ear for the music of style, is calculated to gratify the sense of articulate melody. The following sentence from Milton has often been quoted as an instance of melodious composition:—'We shall conduct you to a hillside, laborious, indeed, at the first ascent; but else so smooth, so green, so full of goodly prospects and melodious sounds on every side, that the harp of Orpheus was not more charming.'

Comparison—Metaphor.

The employment of comparisons serves the purpose of imparting clearness to composition in cases when a familiar and distinct image is employed to illustrate what is indistinct or obscure, as when the action of breathing is expressed by the example of a common bellows. But comparison has an artistic effect also, in consequence of the emotion that is produced by identifying and harmonising the remote and the unlike. The following lines from Chaucer, in his description of the Squire, contain several highly-artistic comparisons:—

> 'Embroided was he, *as it were a mead,*
> *All full of freshe flowrès white and rede;*
> He sung and fluted gayly all the day,
> *He was as fresh as is the month of May.*'

Metaphors are a species of comparison, where the likeness is not formally expressed, but implied by the actual use of the comparison in the room of the original expression. The necessity for metaphors arises from the difficulty of inventing terms in any other way for the more abstract and subtle kind of notions. Thus we speak of the 'head of a state,' the 'tail of a party,' the 'stream of time,' 'a sea of troubles,' 'the light of the world.' Like all other kinds of comparisons, of

which many species have been detailed by rhetoricians, metaphors may conduce either to clearness and force of meaning, or to ornament merely.

Epigram.

Epigram is pre-eminently an attribute of style, and not at all a quality of the thought to be expressed. It is a species of play upon words calculated to surprise and impress the mind in an agreeable way. It comprises antitheses, apparent contradictions, similarities, and contrasts of sound and sense; paradoxes, alliterations, puns, and some of the most striking felicities of metrical composition. 'When you have nothing to say, say it,' is an epigram; likewise, 'I am content, and I don't like my situation.' Butler, Pope, and Dryden abound in this peculiarity. A famous passage of Barrow, professedly illustrative of wit, applies almost exclusively to what we here understand by 'epigram.'

Metonymy—Circumstance—the Picturesque.

Metonymy is the name given to an effect produced by departing from the strict use of language, for the sake of singling out prominent circumstances—as, 'the *city* was put to the *sword*,' instead of 'the inhabitants of the city were slain.' Cromwell is said to have set up parliaments '*by the stroke of his pen*, and scattered them with *the breath of his mouth*.' Instead of the main agent in producing an effect, some collateral or associated object is chosen, so as to make a more vivid image than a strictly accurate statement could produce.

Of the many figures of speech enumerated by the ancient rhetoricians, Metaphor and Metonymy are the only ones that express wide and comprehensive meanings; especially when Metaphor is generalised into *comparison*, and Metonymy into *associated circumstance*. These two ideas of comparison and contiguous association ally themselves with the two fundamental laws of the human intellect, expressed by the terms Similarity and Contiguity, and to this they owe the comprehensiveness of their grasp.

The choice of 'circumstance,' or of collateral particulars suitable to bear out the meaning of a principal term, or to assist in illustrating an idea, is a main point in literary art. Thus to take an instance in description:—

> —'the whining schoolboy, *with his satchel*
> *And shining morning face, creeping like snail*
> *Unwillingly to school*.'

Or, still better, the illustration of the fop:—

> 'And as the soldiers bare dead bodies by,
> He called them untaught knaves, unmannerly,
> To bring a slovenly unhandsome corse
> Betwixt the wind and his nobility.'

As another instance of circumstances powerfully built up for effect, take the following from Milton:—

> 'Nor uglier follow the night-hag, when called
> In secret, riding through the air she comes,
> Lured with the smell of infant blood, to dance
> With Lapland witches, while the lab'ring moon
> Eclipses at their charms.'

The *Picturesque* in literary execution is attained when the expression has been so conceived as to bring out a vivid picture:—

> —'The sixth age shifts
> *Into the lean and slippered pantaloon*.'

To make words *paint*, as if with brush and canvas, is a very high effort of literary art; seeing that their nature is to drop a series of impressions into the mind, and not to hoist instantaneously an expanded scene before the view.

Sublimity.

This effect is produced by an expression of extreme power, grandeur, loftiness, expansion. Strength carried to its utmost pitch, and supported by adequate language, becomes sublime. When large and overpowering objects are set forth in terms equal to their character, they excite the emotion of sublimity. The 'Paradise Lost' is full of sublime effects; were it not so with such a subject, it would be unendurable. As an example of a single stroke, we cannot do better than quote the following image from Shakspeare, which has never been surpassed as an expression by 'circumstance' of utter ruin:—

> —'*though the treasure*
> *Of nature's germins tumble all together*
> *Even till destruction sicken*: answer me to what I ask you.'

Beauty.

This is a very wide word, and if used in its utmost latitude, would cover everything included in artistic effect in general, so that the other particulars under the present head would be but varieties or forms of beauty. The beauties of style are unquestionably for the most part the result of harmony, fitness, and keeping in the various parts of the composition. The adaptation of the whole to its end, the order and harmony of all the particulars, the suiting of the style to the matter, and of the sound to the sense, all combined with the choice of images pictorially beautiful, and of words and cadences musically melodious, are the leading particulars that constitute the beautiful in literary art. When composition, considered as a fine art, perfectly succeeds in its aim, it must needs be beautiful. There may, however, be partial beauties, and beauties of many kinds. Every writer who has ever attained to the rank of a great classic, has owed a part of his success to the circumstance that his composition was such as to be considered a work of art. For the highest beauties of style we need only refer to Milton, Massinger, Addison, or Cowley, among the many great examples in English literature.

Pathos.

This is an effect depending on the tender susceptibility of human nature, on which are founded the warm affections of the heart, and which flows freely on occasions of misery, calamity, and pain. This susceptibility can be reached by verbal expression as well as by other means. Any literary work that delicately stirs the fountains of wounded tenderness is denominated pathetic. This class of compositions, unfortunately, has had occasion to be very numerous. The woes and sorrows, and the tragic doom of mortal men, have inspired lamentations and pathos, elegies and mourning, in every language under heaven. By the ordination of nature, the current of human tenderness is made to flow whenever distress has settled upon a fellow-man, and proves one of the great solacements of affliction. When either sorrow or compassion is aptly expressed in language, we have a stroke of pathos. Burn's 'Man is made to Mourn' is a highly characteristic example. The writings of the Old Testament, especially the book of Job, the Psalms, and the prophets, furnish abundant instances of the same nature. Nothing could exceed the pathos of Jacob's expression to his sons—'Unless Joseph come home with you safe, ye will bring down my gray hairs with sorrow to the grave.' Of recent compositions, the 'Bridge of Sighs' is a well-known example. When what we have previously denominated 'Feeling' is called forth by a tragic occasion, and expressed with becoming art, it produces pathos.

Ludicrous—Wit—Humour.

The feeling of the ludicrous being one of the emotions whose stimulus is highly gratifying to human nature, such a stimulus is frequently attempted by means of speech. As a *spectacle* that causes the ludicrous requires to be made up of some intimate conjunction of the dignified, lofty, or grand, with what is vulgar, mean, or contemptible, so the production of the like effect through *language* must generally imply the embodying of images or actions that possess the same mixture of

incongruity. For example, when Molière presents the celestial messenger of the gods sitting tired on a cloud, and complaining of the number of Jupiter's errands, Night expresses surprise that a god should be weary, whereupon Mercury indignantly asks, 'Are the gods made of iron?'

But confining our view strictly to style, a ludicrous effect is produced when the language is at variance with the matter on the score of dignity; when a mean subject is treated in dignified terms, or a high subject in mean terms. Phillips's parody of Milton in the 'Splendid Shilling' is an instance of the first method; Lucian's 'Dialogues,' and Swift's 'Tale of a Tub,' exemplify the second.

Humour is the ludicrous with an infusion of the tender or the loving, and is a far more exquisite effect than the ludicrous alone. 'Don Quixote' is probably the greatest work of humour that the literature of the world has produced. Addison is also a very high example of the same combination.

Cumulative Richness.

A composition may contain few or many artistic excellences: it may be lean and thin, though not destitute of all merit; or it may be rich, copious, and luxuriant—overflowing in comparisons, pictures, sublimity, beauty, pathos, and humour. The taste of the writer may be severe and exclusive, or it may allow of all kinds of effects that can possibly sit upon a literary work. Of rich and massive productions, we have great examples in those of Rabelais, Shakspeare, Ben Jonson, Richter, and Swift. In the compositions of the seventeenth century in this country, a far greater luxuriance and richness was exhibited than we are accustomed to in the present day.

We proceed now to the various forms of verbal address and composition:—

SIMPLE FORMS OF ADDRESS.

In order that two or more men may act together, or manifest their sociability, there must be some means of making known each other's actions and intentions, or some signs given forth by one and understood by the rest. All the gregarious animals possess the power of establishing a common understanding throughout each herd. This effect is produced in the human species partly by the same natural expression as in the lower animals, and partly by articulate speech, by which the compass of the instrumentality is greatly enlarged. The following are a few cases of the simpler modes of mutual understanding:—

1. *Direction.*—This, to be effective, implies an accurate knowledge of the state of mind of the party addressed, as well as of the force of the expression used, a clear, slow, and deliberate manner, and such a degree of calmness and composure as shall avoid the liability to produce trepidation or terror. Telling a person the way to a place is a good case for practising the virtues and qualifications of a guide.

2. *Command.*—This should be expressive and dignified, but without any mixture of irritation or irascibility; and while involving clearness and sufficiency of direction, it should contain no more explanation than is necessary for acting.

3. *Prayer, Intreaty.*—This implies primarily an appeal to the heart, or natural tenderness, of a fellow-man for the granting of some favour, but it has ultimately become a form including every kind of persuasive address. Taken in the primitive sense, the mode of intreaty should obviously be respectful, humble, and with a tone of sorrow and pathos, which will naturally touch the same strings in the person whose aid is besought. The praying form of speech has in all ages had its highest development in addressing the supernatural powers.

4. *Hostility, Defiance.*—The natural expression given by the tones, looks, and gestures, make this emotion very manifest to the hostile party. When words are selected to add to the force of the expression, they are such as to signify revilings, threatenings, and the indication of hostility through all the relations and associations of life. Simple hostility is carried to its highest expression in the *curse*, which invokes on the head of the offender the enmity of the dreaded powers above.

5. *Encouragement.*—There is a natural language of encouragement and consolation suggested by tenderness and fellow-feeling; and when extended by arousing intellectual associations through the means of a well-chosen address, it includes the suggestion of cheering thoughts and recollections, the holding out of promises and hopes, together with any form of assistance or guidance tenderly expressed.

6. *Interrogation.*—The conditions of this form of address are analogous to direction and command. There is required the same combination of clearness and composure of manner, with an appreciation of the state of mind of the party addressed.

7. *Response.*—Besides giving a statement in answer to an interrogation, this means the mode of acknowledging any form of address, or letting it be known that the effect intended has been produced. There are certain conventional phrases as well as gestures for conveying this acknowledgment—as 'yes,' 'indeed,' 'very well,' 'I understand,' and so forth. It is also conveyed by repeating the statement as conceived by the party addressed. Some form of acknowledgment to complete the understanding is necessary in all cases of direction, command, and instruction.

COMMUNICATION.

As distinguished from the modes of address above alluded to, the present head is intended to comprehend the cases where no immediate action is intended, but where statements are deposited in the mind of the hearer for action in some future day, or in some given circumstances whenever they shall occur. The distinction may be illustrated by comparing the word of command in the field with the directions to a sentry on taking up his post, or with the still more general and contingent directions of seeing that 'the state suffers no harm.' The rules of prudence, social and moral duty, are also of a very general kind.

Still farther removed from the most primitive forms of address are the statements of the facts of nature or life, when made without any reference to action at all; although such statements frequently form the links of action, as well as a gratification of intellectual curiosity. When we say, 'water dissolves sea-salt,' we imply no direction or guidance for immediate action; but we make a communication that may require to be acted on, or it may be treated simply as a statement of the order of nature, used as an interesting explanation of natural appearances. To see that such statements truly express the fact of things, is the province of Logic; but their intelligibility and effect on the mind are governed by Rhetoric.

This branch of the subject divides itself into three subordinate heads—Narration, Description, and Exposition: the first two are exemplified in travels and histories, the last deals with science.

Narration may be said to be the simplest and easiest effort of communication. A stream of words has a natural analogy to a stream of events or actions; hence narrative is the kind of address most easily invented. Ballads, songs, and heroic adventures, where the narrative is stirring and musical, like the conception of the deeds, are in all countries among the most primitive forms of composition.

Description, or pictorial expression, is a more difficult effort of invention, from there being a fainter and less suggestive analogy between still life and a flow of articulate utterance. The painter's instrumentality is the appropriate means of representation in this case. Besides the faintness of the analogy between the subject and the expression, there is the difficulty already alluded to of raising in the mind the image of expanded space by a dropping current of verbal impressions. Under the heads of *Travels* and *Historical Com-*

position we shall advert to the leading points involved in narrative and pictorial description:—

Of Travels.

The *traveller's point of view* furnishes the most natural way of conceiving places and transactions. The *panoramic* display of a country, or the gradual unfolding of scene after scene, is more impressive than any other method of bringing before us a wide and varied scene. The other methods of storing up in the mind the entire expanse of a town or a province, are the *map*, the *bird's-eye-view*, or mountain prospect, and the *statistical catalogue*.

To gratify the longings of men to enter into the living experience that lies behind the detail of exports and imports, of cargoes of tea and sugar, of silk and gold, of latitudes and longitudes, monsoons and rainy seasons, De Foe constructed his admirable fiction of 'A Voyage Round the World,' where he exhibits the entire ongoings of the seafaring and trading life through all the incidents of a circumnavigation of the globe. In this, and in 'Robinson Crusoe,' and in all his other life-pictures and histories, the author has adopted the point of view of a traveller, or of a single eye-witness, whose company the reader is supposed to keep. As one person can see as much as one other person can, this mode of description is perfectly adapted to the natural comprehension of men; while to compare and join together the observations of several persons standing in different positions is a very distracting operation. The life and manners of the heroic Greeks could not have been painted so vividly and intelligibly in any other form as in the adventures of Ulysses. The most fascinating poems and romances are those that run upon the thread of a single personage, as in 'Don Quixote,' or the 'Æneid' of Virgil.

With regard to *description*, as applied to the exterior world, or the appearances presented by surrounding scenery, the representation of which must be the basis of all other descriptions, the following points must be kept in view:—

1. In describing any complex thing whatsoever, we ought to commence by stating some great general or comprehensive feature of the whole, on which to distribute or attach the subsequent details. If there be anything that confers a unity on the object, that unity should be set prominently forth, and the individual parts should all point towards it. Naturalists commence with the *backbone* in the description of the animal frame. The primary conception of the earth is *a huge ball*, with rolling motion and variegated surface. The first epithet to be used in speaking of a mountain should give the general outline—such as, a vast conical hill, a steep ascent, a long ridge, a low flat eminence. In a mountainous country we fix upon the largest mountain range as the backbone, and represent the inferior chains as its members, and we derive from these the starting-points to the valleys, plains, and rivers; and in this way the detailed features preserve their places in our view of the whole. The word-painter shows his art in discerning, in the midst of complexity and detail, some comprehensive feature that gives wholeness or unity to the scene.

The *basis* of the description, or the leading feature to which all the rest has to be related, may be either an *outline* or a *centre*; it may proceed upon a general figure of the circumference and enclosure of the whole, or from some prominent and commanding point in the interior. The inside of a building requires to be described by outline: we must give, in the first place, the form and size of the floor, the height and the form of the roof, with some striking comparison or expression that may serve to bring out the feeling of the solid expanse in the reader's mind. This will be followed up by the orderly detail of the contents; and it is well to repeat and indicate in various ways the great primary notion of the form; for if this once drops out of the view, the whole picture crumbles into confused fragments. Satan's palace in 'Paradise Lost' is admirably pictured by the appropriate expression of space and outline:—

> —— 'The ascending pile
> Stood fixed her stately height; and straight the doors,
> Opening their brazen folds, discover wide
> Within, her ample spaces, over the smooth
> And level pavement; from the arched roof,
> Pendent by subtle magic, many a row
> Of starry lamps and blazing cressets, fed
> With naphtha and asphaltus, yielded light
> As from a sky.'

A plain enclosed by mountains is a proper subject for *outline* description. Seas and lakes, encampments, and all kinds of scenery and expanse whose character and internal arrangement are determined by their enclosing boundary, or by the form of their surface, must be treated in the same manner.

In picturing towns, the basis ought in general to be a *centre*, or some prominent object that governs all the rest, or that is sufficiently important to fix the attention as a leading feature of the scene. The river running through or past a town is usually fixed on for this purpose; or if on the sea-shore, the line of coast may be chosen. Next to these, a great natural valley or a central eminence will serve the purpose; or, lastly, some of the great thoroughfares of the interior. After choosing out a main trunk in this way, and impressing it sufficiently on the mind, we naturally follow out, first its larger, and then its smaller branches; but on all occasions we are to keep starting from the *great centre*. Thus the order of conceiving and describing Edinburgh would obviously be to take, *first*, its situation on the Forth; and *secondly*, its great natural division into the Old and New Towns by the valley along Princes Street; and in specifying a particular spot or locality to a stranger or to a reader, it would be proper always to set out from this central tract until such time as it was thoroughly impressed on the mind; after that we might refer to secondary trunks, such as High Street, the main artery of the Old Town; and the parallels to Princes Street on the north, including the body of the New Town. But until the Princes Street line has been repeated many times, we ought not to make use of a second starting-place. If the reader, or the transient visitor, retains any impression at all, it ought to be Princes Street, with its terminations and boundaries; if he recollect something more than this, it ought to be High Street; and so on. The description and the repetition should be so conducted, that the main trunk may be the most deeply impressed of all, and that the principal branches from it may make the second-best impression; while the largest offshoots from these should rank third in order of impressiveness; and what is first forgotten should be the minuter ramifications—such as the offsets of the interior, and the lanes and minor localities of the scattered suburb. Almost every town may be simplified on this principle. In London, after the Thames, the Strand and Holborn lines are the obvious basis of a traveller's conception. Rome has for its great trunks the river and the Corso; and for its secondaries of reference, the Vatican, the Castle of St Angelo, and the Colosseum—all which have been attended to by Dickens in his picture of the city.

A river, a valley, or a highway may often form the appropriate centre of the general scenery of a district of country; and consequently the description should be shaped with a view to these being vividly impressed. If the continuity of the main line of reference is broken up, the whole scene reels in the imagination of the reader, as if the ground gave way beneath his feet.

2. In description, as practised under the traveller's point of view, it is an important maxim never to let the reader lose hold of the dominant circumstances that rule the perceptions and feelings of the observer. There are certain points that determine, in preference to all others, the state of the mind in any given situation. If we wish to make a second person, as it were, stand where we stood, and see what we saw, we must, *in the*

first place, make him clearly to conceive the *footing* or support, the nature of the ground, and the manner of resting upon it. We should indicate whether our footing was firm or loose, rough or smooth, ascending or descending, and whether we walked, stood, lay, rested, or rode. There will of course be the supposition that we were sustained somehow; but it is essential to let it be distinctly understood what was the exact circumstance of this first and most indispensable contact with the outer world; and the more surely and vividly this is conceived, the more perfect will be the understanding and conception of all other things.

In *the second place*, there should be no mistake about the state of the *light* that prevails at the time, whether clear sunshine in a blue sky, or otherwise; or if, in reference to the night, whether the moon or stars were visible. The poets are particularly attentive to this particular—

> 'He ceased, the whole assembly *silent sat*,
> Charmed into ecstacy by his discourse,
> Throughout the *twilight hall*.'

In *the third place*, it is necessary to indicate decisively the *forward prospect*, which, next to the actual footing, engrosses the solicitude of the mind, and determines the bent of the feelings. It ought to be pointed out whether the prospect is free and open, or shut and encumbered; whether it spreads out far, or closes near at hand; whether it rises or descends. In our onward movement, this determines our hopes and fears, or the complexion of the future; and if we are at rest, it controls our vision and the trains of thought suggested to the imagination.

In *the fourth place*, and next to the forward prospect, the writer should make known the *side hedging* of his path, the close confinement, or free expansion on the right and left; for this, too, will affect his feelings and meditations.

In *the fifth place*, the roofing overhead should be included. In the open air, this would refer to the state of the sky; but it becomes a more essential point of description if under a roof.

To these five points may be added the *sounds* that salute the ear, and any other sensations that are material under the circumstances. No human being can escape from the effects of the various influences now enumerated: they press most intimately upon the whole being; and one person cannot enter into the mind and feelings of another in a different position, without conceiving all of them exactly as they existed. While they remain uncertain and unfelt, all subsequent description of spectacle, motion, sound, and life, is mere fancy-work or aërial pictures, which a second party has no personal relation to, no human sympathy with, no feeling of bodily presence among.

With regard to description in general, as applicable to all cases where a complex object or scene has to be represented to the view, the leading maxim, as already hinted at, is to combine a *type* of the whole with an *enumeration* of the parts. Some comprehensive designation that may spread out the main features of the object is indispensable to the description; and within this the details may be arranged in proper form and order. The following is a very simple instance from Milton, which seems as if it could not have been stated otherwise than he has done; but it shows itself in carrying into complicated cases the method that appears self-evident in easy cases. The words in italics mark the comprehensive designation or type, the rest of the description giving the details:—

> 'They plucked *the seated hills*, with all their load—
> Rocks, waters, woods—and by the shaggy tops
> Up-lifting, bore them in their hands.'

Carlyle's description of the town and neighbourhood of Dunbar, the scene of Cromwell's decisive victory over the Scotch, is rendered vivid and conceivable, in consequence of his always introducing particulars and details by terms and epithets that are at once comprehensive and picturesque:—

'The *small* town of Dunbar stands *high and windy*, looking down over its herring boats, over its grim old castle, now much honeycombed, on *one of those projecting rock-promontories* with which that shore of the Firth of Forth is niched and Vandyked as far as the eye can reach. A beautiful sea; good land too, now that the plougher understands his trade; *a grim niched barrier of whinstone* sheltering it from the chafings and tumblings of the big blue German Ocean. Seaward, St Abb's Head, of whinstone, bounds your horizon to the east, not very far off; west, close by, is the deep bay, and fishy little village of Belhaven: the gloomy Bass and other rock-islets, and farther, the hills of Fife, and *foreshadows of the Highlands*, are visible as you look seaward. From the bottom of Belhaven Bay to that of the next sea-bight St Abb's-ward, the town and its environs form a peninsula. Along the base of which peninsula, "not much above a mile and a-half from sea to sea," Oliver Cromwell's army, on Monday, 2d of September, 1650, stands ranked, with its tents and town behind it, in very forlorn circumstances.

'Landward, as you look from the town of Dunbar, there rises, some short mile off, *a dusky continent of barren heath hills*; the Lammermoor, where only mountain sheep can be at home. The crossing of which by any of its boggy passes and brawling stream-courses no army, hardly a solitary Scotch packman, could attempt in such weather. To the edge of these Lammermoor heights David Leslie has betaken himself; lies now along the utmost spur of them, a long hill of considerable height. There lies he since Sunday night, in the top and slope of this Doon Hill, with the impassable heath continents behind him; embraces, as with outspread tiger-claws, the base-line of Oliver's Dunbar *peninsula*.'

Of Historical Composition.

Narration is, in the simplest class of cases, an easier effort than description; inasmuch as we have merely to enumerate the objects or events one after another as they rise to the view. But since, in the greater number of instances where narration is of any importance, the successive events present individually a wide and complex surface, there is demanded for each an appropriate description; and a succession of descriptions will thus make up the narrative.

This is particularly true of historical narration, or the detail of the larger transactions of masses of men on the face of the globe. History is properly a compound of narration and description: it has to express the mighty march of nations through the ages of time.

There is, however, this peculiarity in the case, that the scene of action remains the same in all its larger features. The surface of the earth, the mountains, valleys, plains, and rivers, where men live and act, continue the same; and they have, therefore, to be made known once for all in the case of each separate people that remain attached to one territory. Although this diminishes the difficulty of the historian, yet there is required considerable exertion on his part to make an ordinary reader conceive with perfect clearness the features of a foreign country. The following are a few of the requisites of historical composition, considered in its purest form; or with as little reference as possible to the expositions of doctrines and opinions, and the criticisms of character and conduct, that mix so largely in the greater number of historical works:—

1. It is essential that the ground where the transactions have occurred should be distinctly pictured forth at the outset, and maintained steadily in view by the subsequent references; in other words, the geography should be fully comprehended by the reader before commencing the history. There will, of course, be certain portions of the geography more pertinent to the narrative than others, and these will naturally be the most insisted on. Thus if the country subsists largely upon its mining operations, the mines must be promi-

nently described in the preliminary survey. With regard to geographical description in general, in which our schoolbooks err deplorably, the principles of description already laid down must be faithfully observed. We must start with a comprehensive sketch of the surface, by stating the great outlines and the prominent central-points, and branch out from these in every direction, in a regular order, and with constant reference to the main features. The *expanded space* occupied by the country should be steadily maintained in the view, there being a constant tendency in the uncultivated mind to allow the territorial expanse to collapse into a jumble of confused particulars, and thus destroy the chief grandeur of the scene. The description of a country by a bare catalogue of its coasts, mountains, rivers, islands, chief towns, &c. is to be considered as a gross violation of every principle of descriptive or expository art. In some of the larger geographical works, such as Ritter's, and the articles on Geography in the 'Penny Cyclopædia,' the *proper order* of description is in general well exemplified.

The full geographical detail includes, in addition to the situation, features, and climate of the country, the nature of the soil and strata, the vegetable and animal life that flourish in it, and the population considered as to its race and connections with the great human family.

2. The second principle of historical composition relates to the tissue and substance of the narrative itself. *A history ought properly to be a series of pictures or cross sections of a nation's existence appropriately selected from different epochs, with an intermediate narrative to explain how the one became transformed into the other.*

It is to be understood that mere existence does not furnish matter for history. If a people have got themselves into a quiet routine of being born, growing up in the exact footsteps of their fathers, and dying, to be succeeded by others like themselves, and continuing thus from generation to generation without progress or change—all that can be stated of such a people is, how they exist at any one time, or what are the incidents of a single generation: there is no material for a continuous narrative. There are many societies very nearly in this predicament: the Chinese are an example of a people with a high civilisation, but with very little tendency to change; and most of the savage tribes of America and Africa, and the wandering hordes of Asia, are still more destitute of the subject matter of a history. Progress, change, expansion, development, all that we mean by civilisation, form the substantial matters of historical narration.

The most prominent spectacle usually presented by nations is their quarrels with their neighbours, with the struggles and wars that ensue, and the loss or gain of territory incident to contests. Every kind of strife, contention, and combat, where large interests are at stake, and the human powers exerted to their very utmost, has an exciting effect on the beholder, and makes a stirring narrative to a reader. The historian, anxious to make his work as little dull as may be, is glad to have such matters to throw into it; indeed they are apt to be the chief things to seize his own attention. Hence the real substance of history has often been concealed by the prominence of the exciting and bustling drama of battle, victory, and death. The internal struggles of a nation for the possession of the sovereign power have the same dramatic interest, in addition to their importance in the real history of the people.

Although it is impossible to lay down a universal formula for historical composition, it may nevertheless be shown that conveniently-chosen epochs for cross sections, or complete pictures of the total life and existence of each people, ought to be the great divisions of the history; and that the narrative should dart between these, so as to explain upon general laws of progress and change how one came to be transformed into another. The selection of the epochs will be determined by the character of each case; the number of them will be greatest in the histories where progress has been most rapid, as in the history of Greece; and the period assumed must depend on the time that would best represent a full and average natural existence. Guizot's 'History of Civilisation in France' exemplifies in some degree this choice of epochs for a detailed picture of social existence.

The arrangement of the details of the entire existence of any one people is a matter of prime importance. It is desirable that the plan should be as simple as the subject admits of, and that one plan should be adhered to as much as possible. If all historians could be made to agree upon the same scheme of descriptive array, the comparison of different peoples and different ages and degrees of civilisation would be very much facilitated. We shall here indicate the outline of an arrangement which seems to be both natural and comprehensive:—

The geography will have to be given once for all in the first sketch that is made; but as the conception of geographical features is somewhat difficult to sustain, repetitions and frequent references require to be introduced here and there all through.

The geographical picture being supposed to be complete up to the point of describing the race and features of the population, the detail of civilisation, or of the arrangements instituted by the intelligence of the people for improving and elevating their condition, will commence. The first class includes the industrial arts, or the arts of agriculture, mining, manufacturing, commerce, &c. These express the mechanical action of the people upon the material earth around them, and will be intimately related to the physical geography. The agricultural arrangements must be governed by the soil and climate; the mining by the rocks; and the manufacturing by the raw material and the facility for mechanical power; while the commercial advancement depends on the means of easy conveyance by seas, rivers, &c.

The second portion of the picture might include the arts of training or rearing living beings—vegetable, animal, and human: the third would refer to the arts of health and healing: the fourth, the arts of intercourse, or the arrangements to facilitate social operations. The chief heads of this comprehensive branch are—language, the forms of business, and etiquette; the arrangement of towns, markets, and places of resort; the classification of the population for easy reference, as by directories, gazetteers, statistics. The fifth branch is the government in all its parts and bearings: the sixth includes the state of morality, in theory and practice: the seventh, religion: eighth, the scientific development of the people, or their acquisitions in all the systematised branches of knowledge. This is the great central feature of the civilisation of mankind taken as a whole. Ninth, the state of the fine arts: tenth, the character of the literature: lastly, the advances made in the art of living, or in all the devices expressly adapted for enlivening and gratifying the course of human existence.

It would require a lengthened illustration to do justice to the exposition of any one of these heads; but, taken together, they seem to imply all that it is desirable to know in reference to any one society. When we go back to past ages, it is difficult to recover the desired information, so as to complete the picture of a bygone epoch. But the possession of some general scheme of this character is essential to the historian, in order to give him a distinct hold of the desiderata of research, and to enable him to find a place for everything that comes under his notice. The mutual dependence of all the great branches of social existence supplies a check to test the accuracy of statements, as well as a means of inferring what is not separately known; and this mutual dependence is most evident when a natural arrangement of the subjects is arrived at.

One of the best examples of the detailed analysis and portraiture of a people at some one epoch is afforded in the first book of Mill's 'History of British

India.' The display of the institutions and whole existence of the Hindoos in that book will render the scope of the above remarks perfectly intelligible to any one desirous of studying the subject. So little have the Hindoos changed within historical periods, that Mr Mill finds one display of their existence to be sufficient; but in a growing country, the array of social existence would have to be gone over more than once. In England there are various epochs that could be fixed upon: a Saxon epoch, a Norman epoch, one at the reign of Elizabeth, a Puritan epoch, and one in the early half of the last century, would be essential; and a considerable amount of explanatory narration would be requisite to connect each of these with the preceding in the way of causation.

These remarks refer to the total march of an entire people, and apply only in a small degree to partial histories, such as histories of science, art, commerce, medicine, &c.; but wherever the stream of events is massive or complicated, the plan of treating it by well-chosen cross delineations is advisable.

History, from the largeness of its subject, is capable of a very wide variety of treatment; and many successful works have been produced, both in ancient and in modern times, although with very different kinds of merit. It is not a little remarkable that the oldest historical composition of pagan antiquity—the work of Herodotus—should come up more nearly than almost any production that could be named to the standard of composition now laid down upon the most advanced scientific considerations that we are able to bring to bear upon the subject. In that great epitome of the ancient world, all the nations known to a Greek inquirer of the fifth century before Christ are pictured forth with vividness and precision, and the classification of details is quite equal to anything employed in the greater number of works of subsequent ages.

Of recent historical compositions, 'Mill's British India' is the greatest English work, viewed according to the exposition now given of the proper tissue and structure of history. 'Guizot's History of Civilisation in France' is the most remarkable foreign production on the same model. The 'History of Greece,' now in course of publication by Mr Grote, promises to be a work worthy of the greatest people that has yet appeared on the face of the globe.

Exposition.

This brings us to a mode of address different from any that we have as yet alluded to—namely, the expression of scientific truth, or of the great laws and uniformities of the appearances and events that may be discovered in the world. If the laws and successions of nature's phenomena appeared on the surface of things, or were as open to ordinary observation as the course of the seasons, or the different scenes of a theatrical performance, then a plain *narration* would be sufficient to indicate the stream of cause and effect, or the laws of natural phenomena. So, if the uniformities of coexistence, the attributes that always accompany one another by the ordination of nature—such as the properties that join together in a vegetable, an animal, or a metal—were as apparent as the furniture of a household, or the array of a mountain prospect, then ordinary *description* would suffice for the exposition of nature's profoundest collocations. But it so happens that neither ordinary narration nor ordinary description is sufficient to express scientific truth, or the comprehensive laws and secret processes of creation. Such is the structure of the universe, that an artificial machinery of expression, having often very little to do with the obvious appearances of things, is required to embrace it by the understanding, and to make it known to other men's minds.

The artificial machinery of language suited for the expression of science is fully explained in our number on Logic; and it belongs to that science to pronounce on the accuracy and sufficiency of any form of language to contain rigorous scientific truth. The nature of abstractions, definitions, propositions, and classifications, is therein set forth. And to Rhetoric belongs, not the art of attaining true abstractions and propositions, but the method of shaping them for easy communication and diffusion among men. The natural mind, which can easily adapt itself to superficial narration and description, finds the comprehension of scientific views hard and unpalatable; and although these contain in a very short compass a boundless range of insight into the world, and give the power of explaining complicated appearances, of predicting the future, and of finding means for the working out of desirable ends, yet such is the difficulty experienced in acquiring possession of them, that high scientific attainments have hitherto been among the least usual of human acquisitions. The progress of science on the one hand, which in many respects tends to simplicity, and of rhetorical method and expository devices on the other, tend to make scientific truths more attainable by the mass of men.

It has been sufficiently explained under Logic that there are two kinds of science—the pure or abstract, and the mixed or concrete: the one has reference to the distinct kinds of phenomena that the world presents—such as phenomena of quantity, considered in mathematics; of force and motion in mechanics; of heat, light, electricity, &c. in physics; of atomic affinity in chemistry; of vital properties in physiology; and lastly, of mind and social agencies in the great sciences of humanity. The other, or the mixed sciences—such as geology—do not confine themselves to a single class of pure natural phenomena, but lay hold of some local or practical department of nature, where two or three different primary forces may be at work. Thus geology involves mechanical, physical, chemical, and vital forces, all taken together. So the practical science of engineering brings together mathematics, mechanics, physics, and chemistry, to attain some gross practical end. It will be seen that the mixed sciences deal with matter more in the lump than in the case of the others; hence they come more nearly within the scope of ordinary description or narration. Unless they are treated of solely by combining the machinery of the pure sciences, they are the more intelligible and popular of the two kinds. Natural history is the designation of a whole nest of concrete or mixed sciences; and if they are kept apart from the deep considerations of the pure sciences of physics, chemistry, and life, that serve for their complete explanation, they are calculated to be highly popular.

The leading maxims to be observed in the exposition of the abstract sciences—such as mathematics, physics, &c.—must be ruled by the consideration, that each of them contains a series of artificial notions or conceptions that can work themselves into the human brain only by a slow and deliberate process. Hence the strictest orderliness must be observed in arranging their constituent ideas, so that each may be presented only after all others necessary for conceiving it have been fully mastered. Scientific acquisition is a work of severe discipline; and the simplest steps should be securely fixed before any attempt is made to go beyond them. The art of the teacher lies wholly in attending to this. The greater number of the abstract sciences fall properly to be taught by the schoolmaster, and not by unassisted books. But when it is desired to make science possessible by a reader going through a book at an ordinary pace, the following procedure must be adopted:—

1. The propositions or abstract notions must be stated in the clearest possible form.

2. Each proposition may be expressed in two or three various forms of language, but there should be some one form adopted for remembering it by. A vivid epigrammatic statement of a proposition, either before, or to sum up and condense, the exposition, is always very effective, and indeed necessary for the sake of the memory.

3. It being understood that only one proposition or

abstraction is stated at a time, each must be followed up by a series of *examples* or instances chosen from things familiar to the reader. The examples at first should be extremely simple, but in the end they should become more difficult, so as to show the power of the principle to throw light upon them.

4. Besides explaining by examples or cases in point, we may explain by *illustration*, or by similes or parallels, from some class of subjects more palpable to the understanding than the one treated of; as when we illustrate the conflict of motives in an individual mind by the visible contests of animal strength. The caution in the use of illustrations is to see that they do not bring in confusing ideas.

The writer of a manual for schools, or of such a book as Euclid's 'Elements,' gives a whole string of definitions, containing strange and unfamiliar notions, without the slightest pause; but the popular writer must take care to bring on upon the stage only one new notion, or technical phrase at a time; and each must be spread out, repeated, exemplified, and illustrated, by easy exposition, before the writer ventures upon a second. One of the great burthens and pains of human life, is to work with half knowledge or half capacity; and this is never more felt than with the reader of a scientific book, where novel conceptions flow in upon him faster than he can fix them.

It has been thought that the concrete objects of the world are not sufficiently kept before the mind in abstract expositions. This is true to a certain extent; for the doctrines of addition, subtraction, multiplication, &c. and the theory of decimal notation, which is the entire foundation of arithmetic, might be rendered much more intelligible by the use of objects—such as wooden cubes made up into rows and squares. This method has been carried out in the system of Pestalozzi. On the other hand, the necessity there is for creating ciphers, symbols, and other artificial apparatus, shows that we are committed to a peculiar region of things; and we must make up our minds to comprehend and use the abstractions themselves, independently of the concrete forms. In the most popular scientific book of our day, Dr Arnott's work on Physics, where concrete illustration is carried as far as it has ever been in an abstract exposition, the author, instead of proceeding gradually from the concrete to the abstract, finds that the nature of his subject requires him to place at the very threshold the four most abstract notions that his subject contains—namely, atom, inertia, attraction, repulsion; and he calls upon his reader to comprehend these as a preliminary to all the rest.

In the other class of sciences—such as Natural History, Geography, Morals, &c. which, instead of being universal and theoretical in their subjects, are more or less either local or practical—a different style of treatment is possible. In the exposition of these there are two great maxims never to be lost sight of:—

1. In endeavouring to make the reader comprehend a class of objects—of animals, trees, shrubs, rocks, strata, or whatever else—it is essential to fix the attention first upon some one actual specimen, and to describe it on all sides, with such a degree of explicitness and fulness, that the entire object shall be completely familiar to his mind. This being once done, other individuals can be defined and made known by their *differences* from the typical one; and whole classes can be chalked out and discriminated. If one individual has been thoroughly conceived in all its parts, then every other individual may be conceived with the same fulness when its difference is made known. Thus the knowledge of the vertebrate series of animals is best secured by a profound acquaintance with the human anatomy: this once achieved, it requires only an attention to the points of distinction to have an equally profound and thorough acquaintance with every individual of the vast series. Now that a universal nomenclature has been completed by the labours of Professor Owen, such a transition from the human type to the vertebrate series is rendered a comparatively easy task. But the grasp of the whole will never be secure unless the knowledge of the *typical instance* is certain.

2. In bringing before us some object that can be represented only by a series of descriptive references to other things, it is necessary to commence with the known, and proceed by known connections to body forth the unknown. The exact state of mind, in respect to knowledge, and interest or likings of the person addressed, must be clearly kept in view. The interest of a description increases by the number of ways that it connects itself with our personal experience. Thus to describe a manufacturing process—say the manufacture of soda—the method is to commence it at the stage where the hearer is familiar with the things employed—namely, at the employment of sea-salt and oil of vitriol—and then give every successive action in language that recalls familiar objects.

The description of animals is rendered intelligible and interesting by dwelling upon the points that have a parallel in human life; as on where they get their living, how often they eat, when they sleep, how they spend their day, the length of their life, their hardships and difficulties, their pairing, procreation, and parental solicitudes, their faculties and capacities, their means of defence and offence. The vegetable and mineral world has an interest by relation to human uses and wants, as well as to the uses of the animal creation at large. If there is any animal or vegetable familiar to us—such as our household quadrupeds and insects—the naturalist has a good hold on our attention, if he wishes to lead us into the hidden minutiæ of their structure and existence. The natural history of household animals would make a work of universal and unfailing interest.

Besides the subjects slightly alluded to in the foregoing remarks, exposition includes a vast range of compositions in politics, law, theology, morals, and many other sciences, besides the wide domain of practical business, where it is required along with the other literary efforts of narration and description.

PERSUASION.

We are now to consider the forms of address suitable to influencing the conduct or activity of men. In addition to the spontaneous impulses of any given individual, there are many ways of acting upon him from without that are equally effectual in determining what he shall do or abstain from doing. He may be made to act through external compulsion, for example, or by the command of his superior, which is moral compulsion. But apart from these, he may be led into action by sympathy with others, and likewise by the influence of the mere will and presence of one who has no means either of coercing or of commanding. But persuasive address differs from all these modes of inducing action upon human beings. It implies that some course of conduct shall be so described or expressed as to coincide, or be identified, with the active impulses of the individuals addressed, and thereby command their adoption of it by the force of their own natural dispositions. A leader of banditti has under him a class of persons whose predominant impulse is the attainment of plunder; and it becomes his business to show them that any scheme that he desires them to carry out will achieve this object. A people with an intense overpowering patriotism, like the old Romans, can be acted on by showing that the good of their country is at stake. A Christian assembly is supposed to be capable of being roused into action by the prospect of extending the power and influence of Christianity in the world. In a comprehensive survey of the Art of Persuasion, the following things deserve to be considered:—

1. The ends most usually sought by means of persuasive address. These are innumerable in their detail, but the purposes of an exposition will be served by singling out a few of the more prominent. In the oratorical professions of the preacher, the pleader, the leader of political assemblies, the newspaper writer, there are

certain well-known objects sought to be attained. In opposition to individual egotisms and peculiarities, it is desired to induce a course of action conducive to the interests of the world, or the community at large, or of some part or section thereof, or, it may be, of some single person. In moral and religious address, the larger and nobler ends of one's being are sought to be impressed and made predominant over present and passing impulses. At other times, the thing aimed at is to make the reason, which embraces the comprehensive good of the whole, to prevail over the passions and instincts. It is often desired to produce *belief* or conviction in men; which means, not immediate action, but a general disposition to act in a particular way when certain occasions arise; as when we wish to prove that the most effective kind of local government is a combination of local authority with the wisdom and experience supplied by a central power. And when men are agreed as to the thing that they should do, much dispute may arise as to the manner of doing it; and the author of each different scheme has to devise ways and means of carrying the minds of the audience with his proposal in preference to the others. There can be no doubt as to the highest and noblest ends of persuasion—which are to sway the minds of men in favour of the universal, the eternal, and the true, as opposed to the sectarian, the temporary, and the false. To induce men to act upon a delusion is a poor triumph. The projectors of bubbles, the inventors of quack medicines, the dealer in puffery and unsubstantial commodities, the panderers to the mob, are all highly persuasive with little art; it being one of the weaknesses of humanity to be impressed by dazzling hopes and prospects. It requires greater genius and skill to induce men to adopt what will succeed in the end.

Although the usual end of persuasive address is to turn the existing dispositions of men to some immediate account, it yet falls within the scope of such address to inflame and cultivate the dispositions themselves, as in the work of the preacher and teacher.

2. It is essential to persuasion that the speaker should be accurately acquainted with the minds and dispositions of his hearers. The perception of character is indispensable to an orator's success: if he mistake his audience, he cannot hope to move them by his address. This thorough knowledge of character is an attainment come at in various ways. The primitive source of our knowledge of our fellows is the consciousness of ourselves, and the assumption that other persons are made after the same fashion. A clear and vivid consciousness of self—that self being abundantly rich and varied—is the foundation of all accurate knowledge of other men's minds. Next to it is sympathy, which implies that we readily fall into the states of mind indicated by the outward expression given forth by those about us. Like the primitive consciousness of self, this differs very much in different individuals. It is the chief corrective of the false assumption that all other men are exactly what we find ourselves to be. The third source of knowledge, and the next to sympathy as a means of enlarging the narrow primitive conception, is the steady observation of men's whole actions and ways, and of everything that shows their dispositions and characters. We have to note the things that attract and repel them, their usual incentives to action, together with their own expression of what influences and guides them. We can go still farther, and experiment upon all these points by endeavouring ourselves to control their actions by suitable management. This combined observation and experiment is the usual recognised source of a knowledge of mankind. Abundant opportunities of seeing men, and acting with them, against them, and on them, are supposed to be the true and only means of being accomplished in this knowledge. But, after all, it is only a valuable supplement of self-consciousness and sympathy. The fourth source of the knowledge in question is furnished by the generalised laws and properties of mind included in the science of mind. But for the purposes of oratory, as practised in our day, this source of knowledge need not at present be discussed. It is evident, on the whole, that a clear consciousness, sympathy, and observation of the impulses and active dispositions of men, confirmed by repeated experimenting upon those very dispositions, are indispensable to persuasive address.

It is a necessary consequence of this knowledge that it should enable a person rapidly to discern a character from its appearances, so as to perceive the dispositions of strangers in a very short time, and to trace instantaneously the effects produced on an audience in the exercise of the oratorical art.

3. Next to a distinct end, and a thorough perception of the moving forces of the assemblage to be wrought upon, comes the great constructive process of the art, which is so to shape the statement of the end, that it may connect itself with the most powerful impulses and convictions of the party addressed. The capacity for this must spring from a rich and accomplished mind, able to discern all the connections and aspects of a subject that are likely to touch the motives or coincide with the dispositions of an audience. Thus, if we examine Milton's apology for unlicensed printing, we shall find that the vast range and compass of his knowledge and conceptions enabled him to lay out with unparalleled fertility the whole subject of the connection of a free press with the welfare and the elevation of the human kind. We may find men more at home in adapting a subject to the exact standard of the ordinary class of minds, so as to be capable of securing a great extent of practical conviction; but nowhere has any one addressed with more varied and powerful persuasives all that is high, generous, and noble in humanity, than Milton in this instance. A genuine, practical, business orator would not have struck so high a key; his object being to gain an end solely, he would have confined his arguments and address to that side of his audience that they could be drawn by. The successful pleaders at the bar furnish the best examples of this last species of oratory.

It being assumed that fertility of intellectual views, with a capability of expressing them in language, are at the basis of persuasive power, it is possible, nevertheless, to assign the precise peculiarities of art which affect a speaker's success. The ancients were well aware of the necessity of a wide general cultivation to make an orator, while they at the same time pointed out the conditions that had to be superadded in order to successful address. These conditions will likewise serve to indicate the precise nature of the capacity and cultivation that best contribute to oratorical efficiency, so as to discriminate between these and the talents and acquirements that point more expressly to other intellectual excellences:—

1. The persuasive mode of composition most frequently be based on some of the preceding modes of simple communication—namely, narration, description, and exposition—but in such a case, these will be so shaped as to influence the minds of the persons addressed towards some particular end. Thus the narration of the facts in an ordinary law-pleading is usually conducted so as to produce a bias in favour of one side; the circumstances that have this tendency being put prominently forward, while the others are kept in the shade. In like manner the exposition of doctrines or principles is involved in a great number of the attempts at persuasion. A beautiful example of an exposition, conducted with high oratorical effect, is furnished in the following extract from one of the speeches of Demosthenes. It professes to be a definition of Law:—

'The whole life of men, whether the state they live in be great or small, is governed either by Nature or by Law. Nature is irregular and capricious; Law is definite, and the same to all. When the natural disposition is evil, it frequently urges to crimes; but the laws aim at the just, the good, and the fit: these they search out, and when determined, they publish as the regulations to be followed by every one alike. To these

obedience must be rendered on many grounds; but most of all on this—that *law is the invention and gift of the gods, the resolution of prudent men, the corrector of voluntary or involuntary wrong-doers, and the determination of the state at large, which is necessarily binding on all its citizens.*'

Here the high function and claims of law are stated and enforced by being allied with the most commanding and august sanctions that the world can furnish.

The following is a modern instance of the same mode of address, where an exposition is the basis of an appeal to the convictions and active principles of men. It is on the subject of slavery; and the author (Robert Hall) intends to produce in his readers a strong feeling of hostility to the slave system by a mere exposition of its essential character:—

'That slavery is the most deplorable condition to which human nature can be reduced, is too evident to require the labour of proof. By subjecting one human being to the absolute control of another, it annihilates the most essential prerogative of a reasonable being, which consists in the power of determining his own actions in every instance in which they are not injurious to others. The right improvement of this prerogative is the source of all the virtue and happiness of which the human race is susceptible. Slavery introduces the most horrible confusion, since it degrades human beings from the denomination of persons to that of things; and by merging the interests of the slave in those of the master, he becomes a mere appendage to the existence of another, instead of preserving the dignity which belongs to a reasonable and accountable nature. Knowledge and virtues are foreign to his state: ignorance the most gross, and dispositions the most depraved, are requisite to reduce him to a level with his condition.'

2. Argument, or proof, which is the medium of bringing the conviction of truths home to men's minds, must be a frequent means of persuasion. If the persons addressed were always of a strictly logical turn of intellect, then the soundest reasons would be the most persuasive; and the rhetorical method would strictly coincide with the logical. But as this is not the case, there are various resources used in the statement of arguments that do not belong to the rigorous demonstration. Indeed there are certain devices, known by the name of arguments, that do not in any degree imply proof—as the *argumentum ad hominem*, and the *argumentum ad verecundiam*, or appeal to authority, neither of which concern the absolute truth of the question at stake. It is very common also to appeal to the inconsistency of some practice, or to show the impossibility of carrying out the principle in all cases. This ought to have more weight than it usually has with the mass of men, who care for immediate objects more than for rigorous thoroughgoing consistency.

In conducting a chain of arguments, it is usual to begin with a full and explicit statement of everything that is admitted by all parties. There is a great advantage in doing this, as it may be possible to shape such a statement so as to suggest inferences of use to the cause in hand.

There is always a powerful effect produced by stating a case so as to appear not only highly credible and probable, but also exceedingly *plausible*, which is done by making the whole case appear to coincide with the familiar experience and natural expectations of the hearers.

3. Another important device consists in summing up an exposition or a chain of reasoning in some short or epigrammatic statement, that will be remembered and circulated. Such statements are adapted to cling to the mind when the whole of a diffuse explanation has vanished. 'Property has its rights as well as its duties,' is a good example. Something of the same effect is produced by compositions that all centre upon some one or a few distinct ideas that are repeated and impressed by every part of the illustration. Dr Chalmers has largely exemplified this mode of exposition and persuasion; Malthus's work on population is also a remarkable instance of the concentration of a large mass of illustration upon one idea, and the effect upon the reader is correspondingly powerful. The science of Astronomy in any exposition that does it justice has the same effect; it being the working out of the one great idea of Gravitation.

4. The mode of demeanour observed by a speaker or writer, although not relevant to the soundness of his arguments, is important in regard to the effect that they may produce upon the persons addressed. This is one of the many considerations as to acting on the feelings, which have to be set forth in a treatise on the whole art of persuasion. The chief point respecting demeanour, is to avoid the appearance of dictation or command when addressing people who are free to adopt or reject the proposals recommended to them. Dictation, with the majority of men, raises a feeling hostile to the speaker; whereas, by a respectful tone of address, by hinting and suggesting, instead of commanding, a prepossession is created in favour of what is urged.

5. The foregoing remark illustrates only one of a comprehensive class of requirements of persuasive address—namely, those referring to the repression of the peculiar feelings and egotistic peculiarities of the speaker, in so far as they clash with his objects. It is one of the standing weaknesses of men to be completely occupied and engrossed each one with his own feelings, and to assume that these are not incompatible with other people's feelings or peculiarities. In the whole intercourse of life, repression of self and regard to other men's likings are essential, but most of all in the attempts that one person makes to influence the wills of others. We are apt to assume that what impresses ourselves will impress our fellows; and it requires a cool observation of the effects that we actually produce on other men's minds, to convince us that we are mistaken in this matter. The success of a speaker will be determined in a great measure by his ability to restrain himself, and assume the exact point of view, as well as the peculiar likings and dislikings, of his audience.

6. The known character and dispositions of a speaker have always a high influence. The respect entertained for him, the belief in the integrity and soundness of his judgments, and the affection and attachment that he is able to inspire, are well known to be conducive to the weight of his address.

7. There may be a special attempt made to induce a favourable state of mind in the hearers towards the speaker. He may expressly lay himself out to indulge their known tastes, likings, and humours, and to adapt himself to their peculiarities and habits. He may, for example, adopt a homely familiar style in addressing the uneducated, and in all cases shape his appeal so as to touch the favourite associations of whatever class he has to deal with.

8. The mere action of sympathy goes some way in every address—that is to say, there is a tendency in every man to give way to the expressed feelings of another when no obstacle stands in the way: consequently a speaker who feels and expresses his feelings intensely, has an influence through this sympathetic action, or by a sort of infection or contagion; and with an audience not indisposed to fall into the current of his emotion, he may be extremely effective. All men of naturally strong earnest emotions, coupled with the adequate power of expression or infection, have been powerful orators.

The expressed will and energetic determination of a man has always great weight in affairs, from the disposition of men to succumb to heavy pressure, when they are not sufficiently excited to resist it. It is a matter of daily observation in assemblies, that a man of strong persevering will carries a great many points that would not be conceded to a person less boisterous and troublesome: mere physical strength of voice and gesture contribute to this effect.

It is constantly seen in the world that there are men and women of naturally powerful and commanding *presence*, who have a far greater facility in bending the wills of those about them than other people who are equally knowing and talented. Teachers, heads of families, persons in authority, are occasionally met with having the natural gift of securing obedience from mere personal ascendancy, and the same bodily constitution has its influence in addressing multitudes. Lord Chatham was evidently an example of a man of a great natural ascendancy of character, apart altogether from the value of his ideas or the intrinsic weight of his language.

It has been found that boldness and loudness of assertion go for something with an audience, however little the assertion may be supported by evidence or proof. Loud-spoken praise on the one hand, or energetic denunciation and abuse on the other, are never altogether devoid of influence.

9. There are certain of the strong emotions of humanity that may be singled out as having great power in producing active impulses when they are once brought into play. Pity, tenderness, compassion, and the warm affections, when roused in favour of a cause, will be found to be strong auxiliaries. In like manner, the ludicrous—humour, mirth, and ridicule—have very great influence. To these we may add the passions of anger, resentment, and indignation, which may be roused, by appropriate representations of a case, to the very great damage of the person or cause against whom they are directed.

10. The gratifying of the emotions of taste and of the love of ornament and beauty, is a useful accompaniment of the persuasive art, and disposes the hearers in favour of the speaker. An ornate speaker like Burke, or a writer like Bacon, will gain influence over a class of minds by the enjoyment that each of them imparts through their style and treatment. The highest poetic art may be brought in aid of an argument; and an appeal to the taste may go a great way, as well as an appeal to the heart or the head. The author of enjoyment will always gain influence over the people that he delights, and he may use this influence to suit his other purposes.

11. There is a certain kind of persuasive address that so completely enters into the heart and feelings and entire being of an audience, that it carries them away as if by irresistible enchantment. If a speaker has the power of inspiring this overwhelming enthusiasm in the minds of an audience, he may do with them as he pleases; he works not by reason, but by infatuation. By intensely exciting and gratifying all the powerful impulses and most exquisite susceptibilities of an individual or a multitude, such an inestimable boon is conferred upon them, that the author of the enchantment may ask what he will, and it will be given him. Men will rush with eagerness to listen to a speaker or to join a cause that can inspire all their highest emotions to the utmost pitch. In our too often dull and tame existence, any system of doctrines and rites, whether religious, moral, political, or scientific, that can impart a spiritual intoxication, will command followers. Indeed an orator or leader can hardly expect to be extensively popular without some power of inspiring an enthusiasm of feeling or sentiment on the side of his cause. It is this that properly constitutes *eloquence*. A spiritual reward has to be given in return for obedience. The influence of an orator is thus of a piece with the influence of a favourite or an object of affection; an influence, not of reason, but of fascination, infatuation. When such powers of fascination concur with truth and right, they are an inestimable blessing to the world.

The progress of civilisation modifies the tone of oratory and eloquence by changing the tempers and aims of men's minds. In a rude primitive age, the passions required to be strongly roused; but in an advanced period of the world, and in calm, settled, routine, comfortable times, cautious prudence and worldly interest exert a powerful sway, and require to be kept in view in persuasive efforts.

POETIC AND LITERARY ART.

The compositions that go under the name of poetry are so various, that a difficulty has been experienced in determining what feature is common to them all. The metrical form is evidently not the boundary of the species, as there are many compositions in prose that are felt to have a highly-poetical character, while many that are cast in a metrical dress do not deserve to be ranked in the class.

The definition given by Coleridge, if it does not completely narrow the idea of poetry to its strict limits, at least goes a great way to do so. According to him, poetry is the contrast, not of prose, but of science. Science analyses and separates the appearances of nature into their ultimate and indivisible parts; in other words, it deals in abstractions, and in certain artificial modes of viewing the world that are adapted for explaining the order of cause and effect, or invariable conjunction therein; while poetry deals in aggregates or combinations, and endeavours to produce such combinations as are of a harmonious kind. Science deals with a majestic river by resolving it into the forces of gravitation, cohesion, liquidity, optical transparency, solubility, &c.; poetry, in common with painting, views it in its full body and entire aspect, and instead of decomposing, *combines* it with other objects of the landscape. To harmonise combinations of different objects and effects is the aim of art in every region; *to harmonise the images and thoughts that can be conveyed by language with one another, and with the language itself, is a general description of the poetic art.* But in accomplishing its end, poetry has to select appropriate *subjects;* for it is not everything expressible in language, however harmonious, that will constitute the matter of a true poem. Accordingly, there is a certain range of materials adapted for poetic treatment, and reproduced in the literatures of all ages: being the objects in the outer world, and the occurrences and situations of human life that most profoundly stir and agitate the minds of men. The eternal struggle of humanity with the world around, and the dread powers above; the tragedy and the triumph of human life; the all-ruling passion of love, and the intense aspirations of men towards the great, the lofty, and the infinite; the magnificence, the variety, the complexity, and the mystery of nature and of being; the divinities that are recognised as ruling in the sphere of the supernatural; the great aspects and scenery of the firmament above, and of the earth beneath; the revolutions of time and seasons; the mode of existence, the achievements and the vicissitudes of human societies, and of their leaders and heroic men; the great conflicts and struggles that decide the fate of nations; the exertions of the superior minds of the race to carry forward human progress and civilisation; the powerful contrasts presented in human life; and, in general, all objects that address themselves to the feelings and susceptibilities that we term sublime, awful, grand, venerable, beautiful, melodious, pathetic, stirring, humorous, or picturesque. The mere vulgar utilities of life, although indispensable to the existence of men, and therefore the objects of their solicitude, do not stir and occupy their entire being so effectually as these matters of extraneous interest, and are not included among poetic subjects. The exclusion also extends to scientific abstractions and technicalities, to tables of logarithms, calculations of annuities, and atomic weights, although expressing some of the gravest facts of creation.

No better short example of the peculiar matter of poetry, adorned with the highest felicity of treatment, could be given than in the following lines:—

> 'How sweet the moonlight sleeps upon this bank!
> Here will we sit, and let the sounds of music
> Creep in our ears; soft stillness and the night
> Become the touches of sweet harmony.

Sit, Jessica; look how the floor of heaven
Is thick inlaid with patines of bright gold;
There's not the smallest orb which thou beholdest,
But in his motion like an angel sings,
Still quiring to the young-eyed cherubim.'

The metrical form of language has always been felt to be the appropriate accompaniment of a certain elevation of subject; while the prose form suits a state of mind more free and composed, as in the ordinary routine business of life. As the dance is to walking, so is the poetical measure to prose. But since the age when prose began to be a form of literary composition, and to be cultivated with artistic skill, innumerable works have been produced which have seized upon the fittest subjects of poetry, and embodied them with a dress and treatment such as to produce effects equal to the finest metrical compositions. The speeches, histories, and moral and critical works of the ancients, which, along with poetry, constituted their polite literature, are adequate to produce the same deep intense human interest that is sought in the greatest productions of poetic genius. And in modern times there are large classes of prose works that draw upon the sources of highest poetic emotion, and differ only from poems in departing from the measured stateliness of metre to adopt a freer and more varied flow of melodious expression. The whole of our romances, novels, and unversified plays, together with much of our history, biography, criticism, sermons, and moral disquisitions, are distinguished by the poetical, in opposition to the utilitarian or scientific aim, and endeavour to stir, cultivate, and inspire the warm susceptibilities and generous enthusiasm of humanity.

Among the many varieties of poetical composition, there are a few that are marked by wide characteristic distinctions which deserve to be specially alluded to.

Lyric Poetry or Song.

This is undoubtedly the most primitive of all literary compositions. The strong predominating feeling of a moment—whether love, heroic resolve, anger, exultation, courage, admiration, grief—in a mind gifted with the outpouring of song, expresses itself in fervid and lofty phrase, which thrills the ears and hearts of men, inspiring them with the like emotion. It is, however, only a very select and limited class of minds whose creativeness takes the lyric form, and they are often incapable of any of the other great poetic efforts. But if we range over the extant literature of the world, we shall find that the most exquisite effusions of song have never been wanting to any cultivated people. The Jews, Greeks, and Romans have contributed a large proportion of those that still delight our modern ears. England, Scotland, Ireland, France, Germany, Italy, Spain, have each produced lyric poets of the finest mould; and in all these countries the mass of the people, who are too rarely reached by works of genius, have had their lives cheered, enlivened, and invigorated by congenial song.

As an exquisite example of the matter of song, and of the cheering turn that it can give to our views of life, we quote the following from Goethe, as translated by Carlyle. The title is 'The Freemason:'—

'The mason's ways are
A type of Existence,
And his persistence
Is as the days are
Of men in this world.

The future hides in it
Good hap and sorrow;
We press still thorough—
Naught that abides in it
Daunting us—onward.

And solemn before us
Veiled the dark portal,
Goal of all mortal:
Stars silent rest o'er us,
Graves under us silent.

But hard are the voices,
Voice of the sage,
The world and the ages;
Choose well; your choice is
Brief, and yet endless.

Here eyes do behold you
In eternity's stillness;
Here is all fulness,
Ye brave, to reward you:
Work, and despair not.'

Epic Poetry.

The epic poem or stirring narrative, with its 'beginning, middle, and end,' its regular development and appropriate conclusion, which, when recited in early times by the wandering rhapsodist, himself perhaps the composer, proved the charm of many a social hearth or assembled village, has in these latter days been transformed into the novel or romance. Sir Walter Scott, for example, has come in place of Homer; 'Don Quixote' is a modern Æneid; and for 'Paradise Lost' and 'Regained,' we have 'Zanoni' or 'Wilhelm Meister's Apprenticeship.'

Plot-interest is the life and soul of the epic, of whatever country or time. A narrative of stirring transactions, with hairbreadth 'scapes, and moving incidents by fire or flood, full of breathless interest and painful suspense, with trials and difficulties getting thicker and thicker around the path of hero and heroine, to be triumphantly and marvellously dispersed in the end—these are the magician's materials for engrossing minds young and old, and for converting sober reality into a fairyland of day-dreams. The wide variety of this species of literature, and the changes that it has undergone between Homer and Virgil, and downward through mediæval romance to the novels of the day, would require an elaborate delineation, which has been repeatedly attempted in the more lengthened works on the history of literature. The greatest and most important peculiarity in the recent course of such productions, is the endeavour to make what is exciting in plot and character coincide more and more with what is real in life; so that the readers may not have their minds preoccupied with false and deceptive notions as to the current of the world and the characters of men. As all such works deal in representations of the transactions or doings of men and women, and put the air of reality upon these as much as possible, their readers cannot help being impressed with the view of life that they set forth; and if this proves coincident with what they actually experience when they come into similar circumstances, they have been instructed and forewarned as well as delighted. To combine truth with intense human interest is the perfection of every form of literature.

The epic form of composition has been made use of by Defoe to give a knowledge of the matter-of-fact world; and by Scott, Bulwer, and others to teach history. Moreover, to point a moral has been a frequent object with novelists; and doubtless all these, as well as many other objects, will be attained with more and more success as the art improves. But being the supply of a constant craving, this form of literature must be subject to all the changes—rational and irrational—of novelty and fashion.

The Drama.

This mode of composition grows out of the picturesque and striking aspects of human society and life. It represents the interesting and exciting intercourse of man with man, and the outward expression and behaviour of men in trying circumstances. Dialogue is the main tissue of the composition; and the predominating interest ought to lie in the action and reaction of the personages on one another. Other points of interest are introduced in subordination to the proper dramatic encounter: there is generally some plot, as in the epic; the thought and sentiment through-

out require to be poetic and striking; the characters must be attractive and well-sustained; and the drift and moral of the piece should not shock our sentiments of truth or propriety. In order to bring out the grandest and most powerful aspects and displays of humanity, it is found that conflict, disaster, and calamity are better adapted than positions of prosperity or good fortune are for this purpose; hence tragedy is the most exciting of dramatic writings.

The pleasure derived by all nations from tragic compositions, which delight in setting forth events of direst misery and ruin, has been one of the most puzzling questions that rhetoricians have had to resolve. It seems very strange that human beings, who are so intensely repelled by any pain or suffering that approaches themselves, should crowd with eagerness to see representations of agony and irretrievable calamity, where no crime has been committed. But if we search deep enough among the fountains of human emotion, we shall find that there is a spring in our nature that leads to this paradoxical conduct, and that the love of tragedy is not the only way that it shows itself.

If we once extricate ourselves from the narrow notion, that the things commonly meant by pleasure and pain, express all that attract or repel us, we shall be so much nearer the understanding of this question. There are many things that attract, interest, engross, arrest, and fascinate the human mind, that can hardly be said to be 'pleasing,' as the word is commonly understood. There are objects and emotions that have an irresistible interest and fascination, and yet are such as to tear and agonize the human breast. The gloomy, the awful, the terrible, the mysterious, are capable of arresting and engrossing men's thoughts, without conferring any addition to their happiness. The spectacle of punishments, executions, or death agonies, takes a deep hold of the mind, and is sometimes with difficulty prevented from becoming a taste: in uncultivated minds such things are often a positive recreation. The huge car of Juggernaut crushes the bones of living men, hurried by fascination to throw themselves in its way; and we have often heard of self-destruction becoming a rage with a certain class of minds. It is superfluous to adduce any more facts to show that there is a tragic emotion in human nature, which gives an interest to things tragic, although we are possessed of other and more healthy impulses which tend to repel such objects.

If to this susceptibility to the tragic we add the multitude of other points of [illegible] created by the genius of the poet, we shall have no difficulty in understanding the popularity of tragedy, both in the drama and in the religion of a people. There is no man living that is not occasionally arrested and enthralled by the great fact of DEATH; and the most gross and reckless of mankind have been wakened to seriousness by the presence of the Destroyer. But the interest inspired by tragic consequences is infinitely heightened, as well as made more rich and mellow, by high displays of character and conduct, by manfulness and noble bearing, by intellect and soul, and all the high qualities that are brought out in great and gifted minds engaged in a mortal struggle. Moreover, tragedy is a truth, a fact of our daily existence, which we have to learn how to encounter. Human life is partly based on the more pleasant epic result of virtue triumphant, and partly on the tragic model of disaster and ruin, which no human power can avert, and where there is nothing left to man but to act a heroic part.

Comedy is the light and mirthful form of the drama. It sets the fear of Heaven and the solemnity of life on the left hand, and enjoys all the encounters of wit and soul that are at once picturesque and exhilarating. Dialogue, both in the letter and in the spirit, is essential to true comedy; monologue or autobiography is the very antithesis of every form of the drama. The interesting and exciting flashes of address and retort, the agreeable complications of mixed interests, plots, and counterplots, misunderstanding, and side play, are the materials of genuine comedy. Both the tragedy and the comedy, as well as the epic, require the seasoning of a love tale, which is as essential in the world of fiction as in the world we live in.

The following extract from one of the comedies of Aristophanes is an example of the genuine dramatic style, where the effect lies in the action and reaction of the characters. Bacchus had gone down to the Shades in search of a dramatic poet, and on his arrival found a dispute commencing between Æschylus and Euripides as to who should possess the tragic throne. Bacchus acts as umpire:—

'*Bacchus.* Come, now, begin—dispute away; but first I give you notice
That every phrase in your discourse must be refined, avoiding
Vulgar absurd comparisons, and awkward silly jokings.
Euripides. At the first outset I forbear to state my own pretensions:
Hereafter I shall mention them, when his have been refuted;
After I shall have fairly shown how he befooled and cheated
The rustic audience that he found, which Phrynicus bequeathed him:
He planted first upon the stage a figure veiled and muffled—
An Achilles, or a Niobé, that never showed their faces;
But kept a tragic attitude, without a word to utter.
Bac. No more they did; 'tis very true.
Eu. In the meanwhile the chorus
Strung on ten strophes right-on-end; but they remained in silence.
Bac. I liked that silence well enough: as well perhaps or better
Than those new talking characters.
Eu. That's from your want of judgment,
Believe me.
Bac. Why, perhaps it is—but what was his intention?
Eu. Why, mere conceit and insolence: to keep the people waiting
Till Niobé should deign to speak—to drive his drama forward.
Bac. Oh what a rascal!—Now I see the tricks he used to play me.
[*To Æschylus, who is showing signs of indignation by various contortions.*]
What makes you writhe and wince about?
Æs. Because he feels my censures.
Then having dragged and drawled along, halfway to the conclusion,
He foisted in a dozen words of noisy, boisterous accent,
With lofty plumes, and shaggy brows, mere bugbears of the language,
That no man ever heard before.
Æs. Alas! alas!
Bac. [*To Æschylus.*] Have done there.
Eu. He never used a simple word.
Bac. [*To Æschylus.*] Don't grind your teeth so strangely.
Eu. But bulwarks, and samanders, and hippogriffs, and gorgons,
'On burnished shields embossed in brass' bloody remorseless phrases,
Which nobody could understand.
Bac. Well, I confess, for my part,
I used to keep awake at night with guesses and conjectures
To think what kind of foreign bird he meant by griffin-horses.
Æs. A figure on the heads of ships: you goose, you must have seen them.
Bac. Well, from the likeness, I declare I took it for Bruxis.
Eu. So figures on the heads of ships are fit for tragic diction!
Æs. Well, then, thou paltry wretch, explain—what were your own devices?
Eu. Not stories about flying stags, like yours, and griffin-horses;
Nor terms nor images derived from tapestry, Persian hangings.
When I received the muse from you I found her puffed and pampered
With pompous sentences and terms—a cumbrous, huge virago.
My first attention was applied to make her look genteelly;
And bring her to a slighter shape by dint of lighter diet:
I fed her with plain household phrase, and cool familiar salad,
With watergruel episode, with sentimental jelly,
With moral mince-meat; till at length I brought her into compass:
Cephisophon, who was my cook, contrived to make them relish.
I kept my plots distinct and clear, and to prevent confusion,
My leading characters rehearsed their pedigrees for prologues.'

The great dramatists, both tragic and comic, are well known to all reading men; and their individual peculiarities have been again and again discussed in the repositories of literary criticism. The mystery of their appearance in galaxies at favoured periods, while other epochs are sterile and barren, will probably long continue to engage the meditations of the curious.

THE VENTING OF EMOTION.

When the mind is powerfully moved with passion or emotion, the bodily organs are indispensably engaged, along with what is considered the more peculiarly mental part of our organisation, in sustaining the current of feeling. Whatever power of expression, natural or artificial, belongs to man, is called into play when a strong stimulus stirs up his being; and the more completely the various organs and impulses are made to harmonise with each other, the more are painful impressions relieved, and the excess of joy moderated. By the sadness of the countenance the heart is made better; by the effusions of song, and the outpouring of the feelings in appropriate language, the oppressed mind finds relief. Many compositions owe their origin to the necessity of giving an outward vent to inward emotion. The poet writes an ode or a sonnet; the religious man utters a prayer; the man in general addresses his friend, or contents himself with a soliloquy, or an apostrophe to the universe in general. Exclamations, ejaculations, oaths, and such-like outpourings, are among the forms of language employed to lighten the pressure of calamity, or calm the torrent of excitement. The more highly cultivated, and the more artistic and exquisite the language at command, the more effectually does it answer this end. The poetic genius can convert an occasion of grief into a mild and soothing sorrow which does not refuse to be comforted; and in the high outbursts of joyous elation, the same genius can transform a tumultuous stream into a gentle current of luxurious and prolonged satisfaction. To give an intellectual form to emotional excitement of every kind is a great advance in refinement as well as in human happiness: and to convert the inarticulate howl of the savage into the tranquil stream of melodious numbers and touching images, is a vast stride in human civilisation. To have therefore a language and a form for expressing all the various feelings that may swell the human breast, is one of the essentials of a community. The poetic literature of each nation generally contains examples of this among its other products; and we have many exquisite specimens of the express effort of venting emotions in appropriate language, without especially addressing any other person. The sonnets of Shakspeare seem to have purely this character.

But as, in addressing fellow-beings, the expression of individual feeling is one of the leading subjects of the communication, it happens that in the drama, and in many other modes of poetical and prose composition, there are abundant examples of the embodiment of feeling, for the purpose of relieving or gratifying the individual emotions and inward longings. How immeasurable the interval between the wail of savage grief at the prospect of death, and the embodiment of the feeling in the lines of Shakspeare!—

> 'Ay, but to die—to go we know not where;
> To lie in cold obstruction, and to rot:
> This sensible warm motion to become
> A kneaded clod; and the delighted spirit
> To bathe in fiery floods, or to reside
> In thrilling regions of thick-ribbed ice:
> To be imprisoned in the viewless winds,
> And blown with restless violence round about
> The pendent world; or to be worse than worst
> Of those that lawless and uncertain thoughts
> Imagine howling! 'Tis too horrible!
> The weariest and most loathed worldly life
> That age, ache, penury, and imprisonment
> Can lay on nature, is a paradise
> To what we fear of death.'

An expression of this character helps to raise humanity above the terrors of evil, and to conquer misery by the grandeur of intellect.

ART OF REFINED ADDRESS.

Under this, which is the concluding head of our subject, we have to allude to the forms of address employed in the refined intercourse of life for pleasing, sympathising, consoling, and otherwise gratifying the feelings of, those about us. There is a well-known art of polite address which consists in interpolating in every kind of discourse terms and associations of an agreeable character. But the prevailing idea in the practice of polite speaking is the expression of deference and compliment, together with a careful abstinence from all disparaging phraseology. It is, in fact, assumed that every person has a predominant feeling of *self*, or *amour propre*, and that the one universal mode of pleasing address consists in gratifying this feeling.

The forms of polite and deferential speech would appear to have sprung, in the first instance, from the expressions invented for testifying respect for authority and rank. Under the Eastern despotisms of the ancient world, the prostration of the subject before the ruler was carried to the most extravagant pitch, both in act and word; and many of the prevailing forms of address no doubt originated in the early despotic civilisations. But the institutions and spirit of modern chivalry, coupled with the influence of Christianity, introduced a mode of politeness that extended to human beings in general. The greater humanity of modern ages was accompanied with a more universal courtesy. The ideal of the knight and the gentleman, as pictured by Chaucer, embodies this quality in a very beautiful and touching way:—

> ——'He was wise,
> And of his port as meek as is a maid.
> He never yet no vilanie ne said
> In all his life unto no manner wight:
> He was a very perfect gentle knight.'

The formal language of courtesy is in general well enough known to the cultivated classes of society; but there is, in addition to this, the far higher art of expressing special opinions and sentiments regarding individuals to themselves in a becoming way; an art demanding a degree of judgment and delicacy which is among the rarer qualities of human beings. Such an art, however, involves so much of manner and demeanour, that it is hardly a subject of pure rhetorical cultivation.

The mode of receiving and acknowledging every kind of address is deserving of study, as being by no means an obvious suggestion of sympathy, even in minds of a sympathetic turn. In a properly-respectful acknowledgment, agreement or coincidence with what is stated should be so expressed as to guard against implying that the statement was superfluous or uncalled for.

The art of consoling, cheering, and encouraging, is a still more difficult art, and one that perhaps has not reached a very high state of advancement, if we consider that one of the large and permanent professions has been devoted to this function—namely, the spiritual order, under every system of religious belief. It is doubtful whether any examples of this style of address can be produced that would compare with the great works of oratory that have been given to the world. There are certain commonplaces of consolation—such as saying, when a misfortune or failure occurs, that we have done our duty, or intended well; or that it is the lot of men to suffer. Such ideas may be more or less adorned in the statement, but, on the whole, they cannot be pronounced of a very high order of creation.

The poetic and other literatures of the world have furnished here and there valuable examples of the arts of pleasing address, sympathy, and consolation. The defect of the habitual instances furnished in poetical and romantic composition, is their being too elaborate for ordinary imitation, especially in oral address.

PRINTING.

PRINTING is the art of producing impressions from characters or figures, movable and immovable, on paper or any other substance. There are several distinct branches of this important art—as the printing of books with movable types, the printing of engraved copper and steel plates, and the taking of impressions from stone, called lithography. Our object, in the first place, is to describe the art of printing books or sheets with movable types, generally called *letterpress printing*, and which may undoubtedly be esteemed the greatest of all human inventions.

ORIGIN AND HISTORY.

The art of printing is of comparatively modern origin: four hundred years have not yet elapsed since the first book was issued from the press; yet we have proofs that the principles upon which it was ultimately developed existed amongst the ancient Chaldean nations. Entire and undecayed bricks of the famed city and tower of Babylon have been found stamped with various symbolical figures and hieroglyphic characters. In this, however, as in every similar relic of antiquity, the object which stamped the figures was in one block or piece, and therefore could be employed only for one distinct subject. This, though a kind of printing, was totally useless for the propagation of literature, on account both of its expensiveness and tediousness. The Chinese are the only existing people who still pursue this rude mode of printing by stamping paper with blocks of wood. The work which they intend to be printed is, in the first place, carefully written upon sheets of thin transparent paper; each of these sheets is glued, with the face downwards, upon a thin tablet of hard wood; and the engraver then, with proper instruments, cuts away the wood in all those parts on which nothing is traced; thus leaving the transcribed characters in *relief*, and ready for printing. In this way as many tablets are necessary as there are written pages. No press is used; but when the ink is laid on, and the paper carefully placed above it, a brush is passed over with the proper degree of pressure. The Chinese chronicles state that the above mode of printing was discovered in China about fifty years before the Christian era, and the art of paper-making about a century and a-half afterwards; previous to which period, all their writings were transcribed or printed in volumes of silk cut into leaves of the required dimensions. Before the discovery of wooden blocks, the Chinese, according to Davis, were in the habit of using stone blocks, on which the writing had been engraved—a process by which the ground of the paper was made black, and the letters left white. This primitive effort led to the improved invention of wooden blocks, on which the characters were cut in relief, and the effect thereby *reversed*—the paper page remaining white, and the letters being impressed in ink.

It is a somewhat curious circumstance, that amongst the first attempts at printing by means of wood-engraving (see No. 96) which can be traced to have been made in Europe, was the making of playing-cards for the amusement of Charles VI. of France. This was towards the latter end of the fourteenth century. Thereafter came prints from wood-blocks of human figures, single or in groups; one of the earliest existing specimens of which was found in a convent not far from Augsburg, with the date 1423 upon it. It is a representation of St Christopher, by an unknown artist; and is now, or was lately, in the possession of Earl Spencer. These prints were at first without any text, or letterpress, as it is modernly termed; but after the groundwork of the art had been completed, its rise towards perfection was almost unparalleled in rapidity. Its professors composed historical subjects with a text or explanation subjoined. The pages were placed in pairs facing each other; and as only one side of the leaf was impressed, the blank pages came also opposite one another; which, being pasted together, gave the whole the appearance of a book printed in the modern fashion. The people not being able to read, were in this manner impressed with glimmering ideas of sacred history. Remarkable incidents mentioned in the books of Moses, in the gospels, and in the Apocalypse of St John, were thus made known to the less-instructed classes, but generally in connection with superstitious legends of the middle ages. Some works of this class were called Biblia Pauperum—'Poor Men's Books;' and copies of them are now extremely rare. 'The few copies which remain in existence,' says Timperley, in his curious 'Encyclopædia of Literary and Typographical Anecdote,' 'are for the most part either imperfect, or in very bad condition. This will not excite much surprise, when it is considered that it is a kind of catechism of the Bible, which was executed for the use of young persons and the common people—it being the only part of the Sacred Book at that time within the reach of the commonalty; a complete Bible in manuscript being then worth a hundred pounds of our money. These facts will account for the destruction of almost every copy of the "Biblia Pauperum," by repeated use, and for the mutilated state of the few copies that remain. The work consists of forty leaves, of a small folio size, each leaf containing a cut in wood, with extracts and descriptive sentences referring to the subjects of the cut. Each page contains four busts—two at the top, and two lower down; together with three historical subjects.' To those unacquainted with the estimation such ancient pieces of printing bear among the virtuosi, it may be amusing to learn that fair copies have brought upwards of £250, and the very worst rarely less than £50.

The next step in the science of typography was that of forming every letter or character of the alphabet separately, so as to be capable of rearrangement, and forming in succession the pages of a work, thereby avoiding the interminable labour of cutting new blocks of types for every page. It is exceedingly remarkable that this most important and yet simple idea should not have occurred to the Romans; and what renders it the more surprising is the fact, which we learn from Virgil, that brands, with the letters of the owner's name, were in use in his time for the purpose of marking cattle. The credit of the discovery was reserved for a German, John Guttenberg (or Guttemberg), who accomplished this important improvement about the year 1438. As this man was the first great improver of typography, to the study of which he exclusively devoted his whole time and attention, a short sketch of his life will only be a part of the history of the art:—Guttenberg, who is supposed to have been born at Mayence, or Mentz, in the beginning of the fifteenth century, settled at Strasburg about the year 1424. In 1435 he entered into partnership with Andrew Drozhennis (or Dritzehen), John Riff, and Andrew Heelman, citizens of Strasburg, binding himself thereby to disclose certain important secrets connected with the art of printing, by which they would attain opulence. The workshop was in the house of Dritzehen, who, dying shortly after the work was commenced, Guttenberg immediately sent his servant, Lawrence Bieldich, to Nicholas, the brother of the deceased, and requested that no person might be admitted into the workshop, lest the secret should be discovered, and the *forms* (or fastened-together types) stolen. But they had already disappeared; and this fraud, as well as the claims of Nicholas Dritzehen to succeed to his brother's

share, produced a lawsuit among the surviving partners. Five witnesses were examined; and from the evidence of Bieldich, Guttenberg's servant, it was incontrovertibly proved that Guttenberg was the first who practised the art of printing with movable types, and that, on the death of Andrew Dritzehen, he had expressly ordered the forms to be broken up, and the characters dispersed, lest any one should discover his secret. The result of this lawsuit, which occurred in 1439, was a dissolution of partnership; and Guttenberg, after having exhausted his means in the effort, proceeded, in 1445–46, to his native city of Mentz, where he resumed his typographic labours. Being ambitious of making his extraordinary invention known, and of value to himself, but being at the same time deficient in the means, he opened his mind to a wealthy goldsmith and worker in precious metals, named John Fust or Faust, and prevailed on him to advance large sums of money in order to make further and more complete trials of the art. Guttenberg being thus associated with Fust, the first regular printing establishment was begun, and the business of printing carried on in a style corresponding to the infancy of the art. After many smaller essays with respect to the capabilities of his press and movable types, Guttenberg had the hardihood to attempt an edition of the Bible, which he succeeded in printing complete, between the years 1450 and 1455. This celebrated Bible, which was the first important specimen of the art of printing, and which, judging from what it has led to, we should certainly esteem as the most extraordinary and praiseworthy of human productions, was executed with cut-metal types on six hundred and thirty-seven leaves; and, from copies still in existence in the Royal Libraries of Berlin and Paris, some of them appear to have been printed on vellum. The work was printed in the Latin language; and besides those on vellum, there are several copies on paper in Germany, France, and England—all of which are justly esteemed as the highest bibliographical treasures.

The execution of this—the first printed Bible—which has justly conferred undying honours on the illustrious Guttenberg, was, most unfortunately, the immediate cause of his ruin. The expenses incident to carrying on a fatiguing and elaborate process of workmanship for a period of five years, being much more considerable than what were originally contemplated by Faust, he instituted a suit against poor Guttenberg, who, in consequence of the decision against him, was obliged to pay interest, and also a part of the capital that had been advanced. This suit was followed by a dissolution of partnership; and the whole of Guttenberg's apparatus fell into the hands of John Faust, who, from being the ostensible agent in the business of printing, and from the wonder expressed by the vulgar in seeing printed sheets, soon acquired the name of a magician, or one in compact with the devil; and under this character, with the appellation of Dr Faustus, he has for ages enjoyed no very enviable notoriety.

Besides the above-mentioned Bible, some other specimens of the work of Guttenberg have been discovered to be in existence. One in particular, which is worthy of notice, was found some years ago among a bundle of old papers in the archives of Mayence. It is an almanac for the year 1457, which served as wrapper for a register of accounts that year. 'This,' says Hansard, 'would most likely be printed towards the close of 1456, and may consequently be deemed the most ancient specimen of typographic printing extant, with a *certain* date. That Guttenberg was a person of refined taste in the execution of his works, is sufficiently obvious. Adopting a very ancient custom, common in the written copies of the Scriptures and the missals of the church, he used a large ornamental letter at the commencement of books and chapters, finely embellished, and surrounded with a variety of figures as in a frame. The initial letter of the first psalm thus forms a beautiful specimen of the art of printing in its early progress. It is richly ornamented with foliage, flowers, a bird, and a greyhound; and is still more beautiful from being printed in a pale blue colour, while the embellishments are red, and of a transparent appearance. What became of Guttenberg immediately after the unsuccessful termination of his lawsuit with Faust is not well known. Like the illustrious discoverer of the great Western Continent, he seems to have retired almost broken-hearted from the world, and to have spent most of the remainder of his days in obscurity. It is ascertained, however, that in the year 1465 he received an annual pension from the Elector Adolphus, but that he only enjoyed this small compensation for his extraordinary invention during three years, and died towards the end of the month of February 1468.

It long formed a subject of contention amongst antiquaries and bibliomaniacs, by what means Guttenberg formed his types; but it is now pretty clearly ascertained that they were at first all individually cut by the hand. The mode of *casting* types in moulds has been very generally, and seemingly correctly, assigned to Guttenberg's successor, Schœffer. This individual was an industrious young man of inventive genius, an apprentice with Faust, who took him into partnership immediately after his rupture with Guttenberg, and who is supposed to have been initiated into the mysteries of the art by the latter. The first joint publication of Faust and Schœffer was a beautiful edition of the Psalms, which came out only about eighteen months after their going into partnership. Along with it appeared a declaration by them, claiming the merit of inventing the cut-metal types with which it was printed; but this pretension was evidently false; and in fact it afterwards appeared that the book had been four years in the press, and must, consequently, have been chiefly executed by Guttenberg. It is worthy of notice that the above publication was the very first to which the date, printer's name, and place of publication were affixed. The most perfect copy known is that in the Imperial Library of Vienna. 'It was discovered,' says the indefatigable Timperley, 'in the year 1665, near Innspruck, in the castle of Ambras, where the Archduke Francis Sigismund had collected a prodigious quantity of manuscripts and printed books; taken for the most part from the famous library of Matthias Corvinus, king of Hungary, from whence it was transported to Vienna. The book is printed in folio, on vellum, and of such extreme variety, that not more than six or seven copies are known to be in existence, all of which, however, differ from each other in some respect. The psalter occupies one hundred and thirty-five, and the recto the hundred and thirty-sixth, and the remaining forty-one leaves are appropriated to the litany, prayers, responses, vigils, &c. The psalms are executed in larger characters than the hymns; the capital letters are cut in wood, with a degree of delicacy and boldness which are truly surprising: the largest of them—the initial letters of the psalms—which are black, red, and blue, must have passed three times through the press.'

To Schœffer, as said before, must be justly awarded the honour of completing Guttenberg's invention, by discovering the method of casting the characters in a *matrix*. In an account of Schœffer, given by Jo. Frid. Faustus of Aschaffenburg, from papers preserved in his family, we are informed that the artist privately prepared matrices for the whole alphabet, and showed the letters cast from them to his master Faust, who was so well pleased, that he gave his daughter, Christina, to him in marriage. Faust and Schœffer concealed the new improvement, by administering an oath of secrecy to all whom they intrusted, till the year 1462, when, by the dispersion of their servants into different countries at the sacking of Mentz, by the Archbishop Adolphus, the invention was publicly divulged, and the art was spread throughout Europe. With Hansard, therefore, we may safely award to Guttenberg the high appellation of the Father of Printing; to Schœffer that of Father of Letter-Founding; and to Faust that of the Generous Patron by whose means the wondrous discovery—the nurse and preserver of the arts and sciences—was brought so rapidly to perfection.

EARLY PROGRESS ON THE CONTINENT.

Haerlem and Strasburg were the first places to which the art of printing was transplanted from Mentz, and this at so early a date, that each of these places has its respective advocates as being the birthplace of it. From Haerlem, it passed into Rome in 1466, where its first professors were Conrad Sweinheim and Arnold Pannartz, who introduced the present Roman type in the following year, in printing Cicero's 'Epistolæ Familiares.' The Gothic character, from which our own *black-letter* was derived, was the next which was employed by the ancient printers; after which, in 1476, the first set of Greek characters was cast by the Italians—whether at Venice, Milan, or Florence, is a disputed point. In 1483, however, all previous attempts at the Greek character were eclipsed by a splendid edition of Homer's works, published at the last-named place, in folio, and printed by Demetrius, a native of Crete. The first book in the Hebrew character was an edition of the Pentateuch, printed in 1482; the whole Bible, including the New Testament, not being executed till 1488. This was done at Soncino, a small town in the duchy of Milan.

In 1467 printing was set up in the city of Tours; at Reuthlingen and Venice in 1469; and, it is believed, at the same time in Paris. This city was the tenth town in Europe in which a printing-press was established; it was set up by Ulrich Gering, a native of the canton of Lucerne, in the house of the Sorbonne, and in the year 1469. This Gering had been taught the art by Elias Helie von Lauffen, who introduced it into Switzerland, and he commenced the operations of the Lucerne press by publishing 'Marchesini's Biblical Lexicon Mamotrectus sive Primicerius,' in the year 1470. The first work which issued from Gering's press at the Sorbonne was the 'Epistolæ Gasparini Pergamensis;' it was also published in the year 1470. Gering continued his labours until 1508, and died on the 23d of August 1510, bequeathing very considerable property for the benefit of young scholars and the poor of Paris. Strasburg was the next town which had the advantage of a press, and soon afterwards Lyons—the one in 1471, the other in 1473. In fact, so rapid at this period was the spread of the new art, that between the years 1469 and 1475, attempts at printing books had been made in most of the principal towns of Germany, Italy, France, and the Netherlands, and often, as in the case of the Spiras of Venice, with eminent success. It was introduced into Russia about the year 1560, or more than a century after its general practice in Southern Europe.

About the year 1496, the letter which we now call *Italic* was invented by Aldus Manutius, a Roman by birth, who set up the business of a printer in Venice. At first, Manutius used his Italic, or Venetian, as he called it, for the printing of entire volumes; but this was not generally approved of by typographers, and after a short period, Italic was employed only for particular words, prefaces, and introductions. Latterly, it has been the practice to use Italic only in very particular cases, as its constant requisition indicates a poor style of literary composition.

PRINTING IN BRITAIN.

The early history of printing in England is obscure. The credit of introducing the art into that country was long believed to be due to Mr William Caxton, a mercer and citizen of London, who, during his travels abroad, and his residence for many years in Holland, Flanders, and Germany, had thoroughly informed himself of the process, and upon his return was induced, by the encouragement of many men of wealth and rank, to set up a press in Westminster Abbey about the year 1471. Such was the tradition amongst writers, and it is still generally believed. Its groundlessness was ascertained about the time of the Restoration, when a little book, which previously had been little thought of, fell under the notice of the curious, as bearing date at Oxford in the year 1468, being three years antecedent to the presumed commencement of Caxton's labours. This book, copies of which are yet extant, is a small quarto of forty-one leaves, entitled 'Exposicio Sancti Jeronimi in Symbolum Apostolorum ad Papum Laurentium.' At the same time (1664) a work was published by a Mr Atkins of London, entitled 'Original and Growth of Printing in England;' in which an account is given of an ancient chronicle, said to have been found in the archbishop's palace at Lambeth, containing the particulars attending the first introduction of the art. By the latter, it would appear that it took place during the reign of Henry VI., under the auspices of Thomas Bourchiers, Archbishop of Canterbury, who sent R. Tournour, master of the robes, and William Caxton, merchant, to Haerlem, who persuaded an under workman, named Corsellis, to come to England and set up a press at Oxford. The manuscript mentions that the transaction cost King Henry 1500 merks. But a single press was soon found insufficient for England; upon which the king set up another at St Alban's, and a third at Westminster; the last being placed under the charge of William Caxton, in the year 1471.

It would be useless for us here to enter into the merits of the question concerning the authenticity of the above-mentioned chronicle, which at one time divided the literary world to a violent degree. We shall only observe that the result of the disputation appears to be this:—The existence of the book before-named establishes beyond a doubt that books were printed at Oxford by Corsellis several years before Caxton set his press to work at Westminster, and therefore that that city has the honour of having been the first seat of the art in England; but Caxton was the first who introduced the printing with *moulded metal types*, the works by his predecessor having been executed merely with wooden ones. It is by our early writers not having attended sufficiently to this line of demarcation between the two stages of the art that the misunderstanding has, as far as we can judge, after much careful investigation, solely arisen.

After the art of printing had been thus introduced into Oxford and St Alban's, it spread to Westminster, Cambridge, Tavistock, Worcester, Canterbury, Ipswich, &c. in almost all cases by the encouragement of the churchmen of these places, and generally with the view of printing works of piety. About the year 1500, or probably somewhat earlier, Pynson was, by patent of Henry VII., invested with the office of king's printer, which may be regarded as the first instance of an appointment of this nature. At the close of the fifteenth and the commencement of the sixteenth century, London possessed a number of printers, but none whose name has been so celebrated as that of Wynken de Worde, a foreigner, who had been instructed under Caxton. He improved the art considerably, and was the first printer in England who introduced the Roman letter—all previous printing, and much of a later date, being in the black or German letter.

Although at first countenanced by the clergy, the art of printing was soon looked upon with extreme jealousy by the church, which at length discovered that this invention was but too certainly calculated to revolutionise the whole fabric of society. The earliest efforts of the art, as we have seen, were directed to the multiplication of the Bible; but for a period of sixty or seventy years from the date of the invention, all the copies of the Scriptures which were printed were in the Latin or some other classic language, not understood by the people. But now a new era commenced. Certain printers began to issue the Bible in the English tongue, translated from the original, and this gave mighty offence to the church, or Romish hierarchy.

In 1526 Richard Grafton, a gentleman of liberal education, having adopted the profession of printing, issued an edition of the New Testament in the English language, which drew down the wrath of the then Bishop of London. A proclamation was issued by this

pulata prohibiting its use. 'Understandeth,' says this document, 'that many children of iniquitie, maintayners of Luther's sect, blynded through extreame wickedness, wandrying from the way of truth, and the Catholicke fayth, craftely have translated the New Testament into our English tongue, entermedlying therewith many hereticall articles and erroneous opinions, pernicious and offensive, seducying the simple people,' &c. The proclamation goes on to order all copies of the said New Testament to be brought to the bishop's vicar-general to be burnt, under pain of excommunication, and incurring the suspicion of heresy. It does not appear that the fulminations of the bishop were of much effect. The New Testament having been readily purchased, it led to the publication in 1535, of the whole Bible in the English language, to which it was translated by Miles Coverdale. By this noble undertaking was accomplished abroad. In 1539 England had the honour of producing an edition of the Bible in the English tongue, under the auspices of Cranmer and Henry VIII., the work being executed by Grafton and Edward Whitechurch.

The progress of the art in England, after its first rush into notoriety, was remarkably slow. In the sixteenth century it was interrupted by the broils consequent on the Reformation, and in the seventeenth century by the still greater harassements of the Civil War, and the gloomy religious spirit which prevailed up till the Restoration. This last event was even unfavourable to it, by introducing a general licentiousness and contempt for any solid and respectable literature. At this period there was an act of parliament still in force, preventing more than twenty printers to practise their art in the kingdom. 'At the fire of London in 1666 (we quote a writer in the 'Penny Magazine') the booksellers dwelling about St Paul's lost an immense stock of books in quires, amounting, according to Evelyn, to £200,000, which they were accustomed to stow in the vaults in the metropolitan cathedral and of other neighbouring churches. At that time the people were beginning to read again, and to think; and as new capital naturally rushed in to replace the consumed stock of books, there was considerable activity once more in printing. The laws regulating the number of printers soon after fell into disuse, as they had long fallen into contempt. We have before us a catalogue (the first compiled in this country) of "all the books printed in England since the dreadful fire, 1666, to the end of Trinity term, 1680," which catalogue is continued to 1685, year by year. A great many—we may fairly say one half—of these books are single sermons, curious pamphlet sheets, and tracts.

The whole number of books printed during the fourteen years from 1666 to 1680, we ascertain, by counting, was 3550, of which 947 were divinity, 420 law, and 153 physic—so that two-fifths of the whole were professional books; 397 were school-books; and 253 on subjects of geography and navigation, including maps. Taking the average of these fourteen years, the total number of works produced yearly was 253; but deducting the reprints, pamphlets, single sermons, and maps, we may fairly assume that the yearly average of new books was much under 100. Of the number of copies constituting an edition, we have no record; we apprehend it must have been small, for the price of a book, as far as we can ascertain it, was considerable.

Roger North, speaking of those booksellers of his day who had the knack of getting up volumes on temporary matters, says, "They crack their brains to find out selling subjects, and keep hirelings in garrets, on hard meat, to write and correct by the grate; so puff up an *octavo* to a sufficient thickness, and there is *six shillings* current for an hour and a-half's reading." In a catalogue, with prices, printed twenty-two years after the one we have just noticed, we find that the ordinary cost of an octavo was *five shillings*.'

After the Revolution of 1688, the business of printing rapidly increased, by the demands for sheets of intelligence or news, as well as for a better class of literary productions. In the reign of Queen Anne, printing was increased still further by the issue of the 'Guardian,' 'Spectator,' and other literary sheets; and, in 1731 it received considerable impetus by the establishment of the 'Gentleman's Magazine,' being the first of the class of larger periodicals. Between 1700 and 1756, about 6000 volumes (exclusive of tracts and pamphlets) were published—a number which, since the commencement of the present century, has been increased thirtyfold. According to the last census, upwards of 16,000 persons are employed in the book trade of the United Kingdom!

Printing was introduced into Scotland, and begun in Edinburgh, about thirty years after Caxton had brought it into England. Mr Watson, in his 'History of Printing,' says that the art was introduced in Scotland from the Low Countries by the priests who fled thither from the persecutions at home. Be this as it may, we find James IV. granting a patent in 1507 to Walter Chapman, a merchant of Edinburgh, and Andrew Mollar, a workman, to establish a press in that city. According to bibliographers, the most ancient specimen of printing in Scotland extant is a collection entitled the *Porteus of Nobleness*, Edinburgh. In 1509, a *Breviary of the Church of Aberdeen* was printed at Edinburgh; and a second part in the following year. Very few works, however, appear to have issued from the Scottish press for the next thirty years; but from 1541, the date from which we find James V. granting licences to print, the art has been pursued with success in the metropolis. At present, and from the beginning of the present century, it is perhaps the most distinguished craft in the city, being conducted in all its departments of typefounding, printing, publishing, and, we may add, paper-making at the mills in the vicinity.

Printing was not known in Ireland till about the year 1551, when a book in black-letter was issued from a press in Dublin; but till the year 1700, very little printing was executed in Ireland, and even since that period, the country has acquired no celebrity whatever in this department of the arts, although possessing some respectable printing establishments. At present, Dublin and Belfast are the only printing and publishing stations in the sister kingdom.

PROGRESS ON THE CONTINENT AND IN AMERICA.

The progress of printing on the continent of Europe has been remarkably slow. Unless in the free states of Germany, where the art is pursued to an incalculable extent, the profession of the printer is almost everywhere under the severest restrictions, and little can be published without coming first under the scrutiny of censors appointed by the governments. The art is carried on in Brussels and Paris perhaps with a greater degree of freedom than usual in other continental capitals, and from the presses in the latter city some exceedingly elegant works have been issued. But at Paris, as everywhere else, there is a general inferiority in the mechanism of the printing-office, when compared with that now in use in England and Scotland, except in those cases in which the presses employed have been imported from Great Britain.

While the art of printing has been, by slow degrees, creeping through the despotically-governed states of Europe, and establishing itself at isolated spots in Oriental countries, everywhere creating distrust, and nowhere allowed to be exercised with perfect freedom, it has readily taken root and flourished among the civilised inhabitants of North America. The first printing-press established in the American colonies was one set up at Cambridge, in Massachusetts, in the year 1638, the era of the foundation of Harvard College of that place. It was only established by the exertions and joint contributions of different individuals in Europe and America; and there is no doubt that the mechanism and types were imported from England. The first work which issued from this press was the 'Freeman's Call,' and the second the 'Almanac for New England,' both in 1639; the first book printed was the New England version of the Psalms, an octavo

volume of 300 pages. In 1676 books began to be printed at Boston; in 1686 printing became known in Philadelphia; and in 1693 in New York. In the year 1700 there were only four printing-presses in the colonies. Since that period, and especially since the revolution, which removed everything like a censorship of the press, the number of printing-presses has greatly increased. The mechanism of the press has likewise been much improved in that country; and the Americans have copied the patent steam-press of Cowper of London, and now possess machines of this description. In 1800 the number of presses had increased to 300; in 1830 they amounted to 1200; and we learn that they are still increasing in number and extending their influence. Boston, New York, and Philadelphia may be considered as the principal printing stations in the Union—from the presses of which have issued not only reprints of the majority of standard English works, but original volumes and series of volumes which do honour to American literature. In their style of typography and bookmaking the Americans are still inferior to the English, sacrificing beauty and durability to economy and despatch. Some years ago, the Cherokees, one of the tribes of native Indians, set up a press, and commenced a newspaper—a circumstance which may be regarded as an extraordinary proof of the growth of knowledge in America.

We shall now proceed to a description of the art in its various branches, though without entering into the more minute, and what would be tiresome, technical details of the profession.

OF THE TYPES.

Printers in early times made the letters which they used, but in process of time the necessity for a division of labour created the distinct trade of a manufacturer of types, and it is only in rare instances in the present day that printers supply their own letter. The preparation of types requires much delicacy and skill. The first step in the process is the cutting of a punch or die, resembling the required letter. The punch is of hardened steel, with the figure of the letter cut, the reverse way, upon its point. On this die being finished, it is struck into a piece of copper, about an inch and a-quarter long, one-eighth of an inch deep, and of a width proportionate to the size of the type to be cast. This copper, being so impressed with the representation of the letter, is called the matrix. The matrix is now fixed into a small instrument or frame, called the mould, which is composed of two parts. The external surface is of wood, the internal of steel. At the top is a shelving orifice, into which the metal is poured. The space within is of the size of the required body of the letter, and is made exceedingly true. The melted metal, being poured into this space, sinks down to the bottom into the matrix, and instantly cooling, the mould is made to open with the instantaneous movement of a spring, and the type is cast out by the workman. This process of casting types is executed with great celerity. Of course every separate letter in the alphabet, every figure, point, or mark, must have its own punch and matrix. In casting types, the founder stands at a table, and has beside him a small furnace and pot with heated metal, which he lifts with a small ladle. Type metal is a compound of lead and regulus of antimony, the latter giving hardness and sharpness of edge to the composition. The proper proportions of these metals is regulated by the size of the type, a greater quantity of antimony being employed for small than large letters.

When the type is cast from the mould, it is in a rough state, and as soon as a heap has accumulated on the caster's table, they are removed by a boy, who breaks off the superfluous tag of metal hanging at the end of each type. From the breaking-off boy the types are removed to another place, where a boy is constantly engaged in rubbing or smoothing their edges upon a stone. Being now tolerably well cleaned, they are next removed to a table, and set up in long lines upon a frame, where they are polished and made ready for use. Whatever be the size of the types, they are all made of a uniform height, and must be perfectly true in their angles, otherwise it would be quite impossible to lock them together. A single irregular type would most likely derange a whole page. The height of a type is, or ought to be, exactly one inch; but founders, much to their discredit, do not act with uniformity in this particular, the letters of some founders being higher than those of others. But all the types of one class of any founder are always uniform in size and height; and so preserve their individuality, all the letters, points, &c. belonging to one class, are distinguished by one or more notches or nicks on the body of the type, which notches range evenly when the types are set. These nicks, as we shall immediately see, are also exceedingly useful in guiding the hand of the compositor. Types are likewise all equally grooved in the bottom, to make them stand steadily.

The varieties of size of types in the present day amount to forty or fifty, enlarging, by a progressive scale, from the minutest used in printing pocket Bibles, to the largest which is seen in posting-bills on the streets. Printers have a distinct name for each size of letter, and use about twelve sizes in different descriptions of book-work; the smallest is called *Brilliant*, the next *Diamond*, and then follow in gradation upwards, *Pearl*, *Ruby*, *Nonpareil*, *Minion*, *Brevier* (the type with which this sheet is printed), *Bourgeois*, *Long Primer*, *Small Pica*, *Pica*, and *English*. The larger sizes generally take their names thus—*Two-line Pica*, *Two-line English*, *Four*, *Six*, *Eight*, or *Ten-line Pica*, &c. Other nations have adopted different designations for their letters, principally from the names of their inventors; for instance, the French entitle Small Pica, *Philosophie*, from the first maker of the letter. Some of these classes of letters have derived their names from having been first employed in the printing of the prayers of the Romish Church. Thus, *Pica*, from the service of the mass, termed *Pica*, or *Pie*, from the glaring contrast between the black and white on the page; *Primer*, from *Primarius*, the book of prayers to the Virgin; *Brevier*, from *Breviary*; *Canon*, from the *canons* of the church, &c.

All kinds of types are sold by weight by the founders, the price varying in amount according to the size of the letter. The smallest size, *Brilliant*, costs about 18s. per pound; *Diamond*, about 11s. per pound; *Brevier*, from 2s. to 3s.; *English*, from 1s. 6d. to 2s.; and so on in proportion for all intermediate sizes. Expensive as types thus are, their prices will not appear too high, considering the immense outlay in cutting the punches and the general manufacture. In the *Diamond* size, 2800 go to a single pound weight of the letter *i*, and of the thinnest *space* about 5000.

A complete assortment of types is called a *Fount*, which may be regulated to any extent. Every typefounder has a scale showing the proportional quantity of each letter required for a fount; and a peculiar scale is required for every language. For the English language, the following is a typefounder's scale for the small letters of a fount of types of a particular size and weight:—

a	8400	h	6400	o	8000	v	1200
b	1600	i	8000	p	1700	w	2000
c	3000	j	400	q	500	x	400
d	4400	k	800	r	6200	y	2000
e	12,000	l	4000	s	8000	z	100
f	2500	m	3000	t	9000		
g	1700	n	8000	u	3400		

It will be seen from this scale that the letter *e* is used much more frequently than any other character.

Types are nowhere manufactured so well as in Great Britain, and for their elegance and regularity of form they have been much indebted to the late William Caslon, letter-founder in London. Mr Caslon was originally an engraver of ornamental devices on the barrels of firearms, and a maker of bookbinders' tools. The neatness with which he executed his work brought

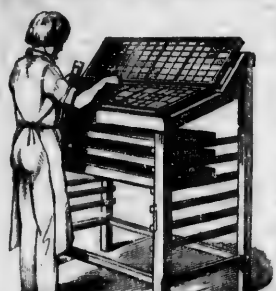
him into notice, and he was appointed to cut a fount of Arabic letters for an edition of the New Testament. This occurred about the year 1720, and from this period he entered on a successful career as a letter-founder. Hitherto the types used in England had been mostly imported from Holland; but Caslon's letters, by their decided superiority over those of all competitors at home and abroad, soon put a stop to the importation of foreign types, and were held in such estimation, as to be frequently sent to continental countries. From 1720 till 1780, few books were printed in England with the types of any other than this foundry, which still continues in existence in London.

The ingenuity and success of Caslon meet with a parallel in the case of the late Mr Alexander Wilson, typefounder in Glasgow. This person, by a strong effort of perseverance under difficulties, began to cut punches for types at his native town, St Andrews, about the year 1740, and there opened a letter foundry—the first established in Scotland—in company with an equally enterprising individual named Bain. In 1744, Messrs Wilson and Bain removed with their foundry to the neighbourhood of Glasgow, where it long flourished. The types produced by Mr Wilson were exceedingly neat, and even elegant, and became the real foundation of the fame of the Messrs Foulis, printers, whose editions of the Classics were printed from them. Branches of the Glasgow letter-foundry were afterwards established in the English and Scottish capitals. In Edinburgh, besides the foundry of the Messrs Wilson, grandsons of the first of the name, the principal establishment of the kind is that of Messrs Millar and Company, whose types we consider as standing in the first class in respect of neatness, beauty, and regularity. They are largely employed in the printing of Bibles, newspapers, and other works in which a small type is required; and it is with letter from this extensive foundry that CHAMBERS'S JOURNAL and the present publication are executed.

The large letters used in posting and handbills are manufactured chiefly at Sheffield. In this kind of types very great improvements have also been made in recent times; and the varieties are becoming yearly more numerous and ornamental in character. The letter used in printing in North America is made principally at New York; and the style of both typography and presswork in that country is rapidly improving, and now almost competing with the products of the English press.

COMPOSING.

All the types in use in the printing-office are sorted in cases, or shallow boxes, with divisions. There are two kinds of cases—the *upper* and *lower case*; the latter lying nearest the compositor upon the frame for their support. The annexed illustration exhibits the arrangement of the cases and position of the compositor—the lower case being immediately under his hand, the upper case directly above in a slanting position, and the under part of the frame stocked with cases of different founts. In the upper case are placed all the capitals, small capitals, accented letters, a few of the points, and characters used as references to notes. In the lower case lie all the small letters, figures, the remainder of the points, and spaces to place betwixt the words. In the lower, no alphabetical arrangement is preserved; each letter has a larger or smaller box allotted to it, according as it is more or less frequently required; and all those letters most in request are placed at the nearest convenient distance to the compositor. By this ingenious and irregular division of the lower case, much time is saved to the compositor, who requires no label to direct him to the spot where lies the particular letter he wants. To a stranger in a printing-office, nothing appears so remarkable as the rapidity with which the compositor does his work; but habit very soon leads the hand rapidly and mechanically to the letter required. When *Italic* letters have to be introduced, they are taken from a separate pair of cases of the same fount.

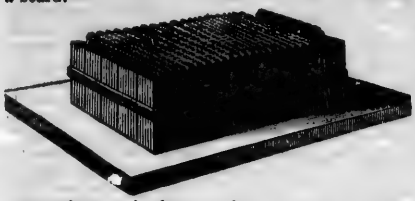


The process of composing and forming types into pages may now be adverted to. Placing the copy or manuscript before him on the upper case, and standing in front of the lower case, the compositor holds in his left hand what is termed a composing-stick. Sometimes this instrument is of wood, with a certain space cut in it of a particular width; but more commonly it is made of iron or brass, with a movable side, which, by means of a screw, may be regulated to any width of line. In either case, the composing-stick is made perfectly true and square. One by one the compositor lifts and puts the letters of each word and sentence, and appropriate points, into his stick, securing each with the thumb of his left hand, and placing them side by side from left to right along the line. When he places a letter in the stick, he does not require to look whether he is placing it with the face in its proper position. His object is accomplished by looking at what is called the *nick*, which must be placed outwards in his composing-stick. (See adjoining representation of a type.) This is one of those beautiful contrivances for saving labour which experience has introduced into every art, and which are as valuable for diminishing the cost of production as the more elaborate inventions of machinery. When he arrives at the end of his line, the compositor has a task to perform in which the carefulness of the workman is greatly exhibited. The first letter and the last must be at the extremities of the line: there must be no spaces left in some instances, and no crowding in others, as we see in the best manuscript. Each metal type is of a constant thickness, as far as regards that particular size of letter; though all the letters are not of the same thickness. The adjustments, therefore, to complete the line with a word, or at anyrate with a syllable, must be made by varying the thickness of the spaces between each word. A good compositor is distinguished by uniformity of spacing: he will not allow the words to be very close together in some instances, and with a large gap between them in others. His duty is to equalise the spacing as much as he possibly can; and this is in some cases very troublesome. In composing poetry or similar matter, where there is always a blank space at one of the ends of the line, spacing is very easily accomplished by filling up the blank with larger spaces, or *quadrats*. But whether prose or poetry, the matter of each line must be equally adjusted and *justified*, so as to correspond in point of compactness with the previously set lines. The process of composing is greatly facilitated by the compositor using a thin slip of brass, called a *setting-rule*, which he places in the composing-stick when he begins, and which, on a line being completed, he pulls out and places upon the front of the line so completed, in order that the types he sets may not come in contact with the types behind them, but glide smoothly into their places to the bottom of the composing-stick.

When the workman has set up as many lines as his composing-stick will conveniently hold, he lifts them out by grasping them with the fingers of each hand, and thus taking them up as if they were a solid piece of metal. He then places the mass in an elongated board, termed a *galley*, which has a ledge on one or perhaps both sides. The facility with which some compositors can lift what is called a *handful* of movable type with-

out deranging a single letter is very remarkable. This sort of skill can only be attained by practice; and one of the severest mortifications which the printer's apprentice has to endure, is to toil for an hour in picking up about a thousand letters, and then see the fabric destroyed by his own unskilfulness, leaving him to mourn over his heap of broken type, technically denominated *pie*.

Letter by letter, and word by word, is the composing-stick filled; and by the same progression the galley is filled by the contents of successive sticks. When the compositor has set up as many lines as fill a page, he binds them tightly round with cord, and removes them from the galley. The annexed cut is a representation of a small page of types tied up, and placed on a board:—



Sometimes, as in the case of newspaper and similar work, the *handfuls* of type are accumulated till they fill the galley, and are then removed in long columns. After the matter is thus so far prepared, it is the duty of the pressman to take an impression or *first proof* from the types, in order that the compositor may correct the errors which are sure to have been made. Proofs are usually taken by means of an old large press kept for the purpose. After the galley matter is corrected, and re-corrected by the compositor, it is divided into pages of the size wanted; and head-lines, or figures indicating the number of the page, being added, the pages are arranged upon a large firm table, and there securely fixed up in an iron frame or *chess*, by means of slips of wood and wedges, or *quoins*.

This process, which is called *imposing*, being completed, and the face of the types being levelled by a *plainer* and mallet, the *form*, as it is called, is proved, and prepared for press. Proof-sheets being taken, they are subjected to the scrutiny both of a *reader* employed in this peculiar function in the office, and of the author. These having made their marks pointing out words and letters to be altered or corrected, the compositor once more goes over the form, correcting the errors by lifting out the letters with a bodkin, and, when revised, the sheet is pronounced ready for working. It may be explained that the imposing table at which all these corrections are made is usually composed of smooth stone or marble, or cast-iron on the top, and requires to be a substantial fabric.

It need scarcely be told that the size of books greatly varies; but the sizes are all reducible to a standard determined by the number of leaves into which a sheet of paper is folded. The largest size is denominated *folio*, being simply a sheet folded into two leaves or folios; and the next *quarto*, or a sheet folded, as the name implies, into *four* leaves. The most common size is *octavo*, each sheet of which contains eight leaves, or sixteen pages; the next is *duodecimo*, containing twelve leaves, or twenty-four pages in the sheet; and the next *octodecimo*, or eighteens, containing thirty-six pages in a sheet. There are many other sizes, such as *twenty-fours*, &c. To know how to place pages of types in a form so as to produce, when printed, a regular series upon paper, is one of the branches of the art to be acquired by the young compositor.

PROGRESSIVE IMPROVEMENTS IN TYPOGRAPHY.

The following particulars, relative to the early productions of the press, will show how the style of book-printing was gradually improved:—'With respect to their forms, they were generally either large or small folios, or at least quartos: the lesser sizes were not in use. The leaves were without running title, direction word, number of pages, or divisions into paragraphs. The character itself was a rude old Gothic mixed with Secretary, designed on purpose to imitate the handwriting of those times; the words were printed so close to one another, that it was difficult and tedious to be read, even by those who were used to manuscripts, and to this method; and often led the inattentive reader into mistakes. Their orthography was various, and often arbitrary, disregarding method. They had very frequent abbreviations, which in time grew so numerous and difficult to be understood, that there was a necessity of writing a book to teach the manner of reading them. Their periods were distinguished by no other points than the double or single one—that is, the colon and full point; but they, a little after, introduced an oblique stroke, thus /, which answered the purpose of our comma. They used no capital letter to begin a sentence, or for proper names of men or places. They left blanks for the places of titles, initial letters, and other ornaments, in order to have them supplied by the illuminators, whose ingenious art, though in vogue before, and at that time, did not long survive the masterly improvements made by the printers in this branch of their art. Those ornaments were exquisitely fine, and curiously variegated with the most beautiful colours, and even with gold and silver; the margins, likewise, were frequently charged with a variety of figures of saints, birds, beasts, monsters, flowers, &c. which had sometimes relation to the contents of the page, though often none at all. These embellishments were very costly; but for those that could not afford a great price, there were more inferior ornaments, which could be done at a much easier rate. The name of the printer, place of his residence, &c. &c. were either whole neglected, or put at the end of the book, not without some pious ejaculation or doxology. The date was likewise omitted, or involved in some crampt circumstantial period, or else printed either at full length or by numerical letters, and sometimes partly one and partly the other—thus, one thousand CCCC and lxxiiii, &c.; but all of them at the end of the book. There was no variety of characters, no intermixture of Roman and Italic; they are of later invention; but their pages were continued in a Gothic letter of the same size throughout. They printed but few copies at once, for 200 or 300 were then esteemed a large impression; though, upon the encouragement received from the learned, they increased their numbers in proportion.'

About 1469-1470, alphabetical tables of the first words of each chapter were introduced, as a guide to the binder. Catch-words (now generally abolished) were first used at Venice by Vindeline de Spira. Early printed books had no signatures. *Signatures* are those letters of the alphabet which are put at the bottom of the right-hand pages of sheets to distinguish their order. When the alphabet is finished, a second begins A a, or 2 A, instead of a single A; and when that is terminated, A a a, or 3 A, begin the third; and so on. In order to indicate more correctly the order of each sheet, printers add figures to the initial letter on the third, fifth, and seventh pages; the numbers of these figures, which do not pass the middle of the sheet, point out the size of the edition. Thus A 2 on the third page, A 3 on the fifth, and A 4 on the seventh, show a work to be in 8vo.; in the 12mo. size, A 5 on the ninth page, and A 6 on the eleventh page, &c.; but it is now customary to give signatures only on the first and third pages of 8vo., and on the first, third, and fifth pages of 12mo.

In some modern French works, figures are substituted for letters, and the other leaves are marked by asterisks. The invention of signatures is ascribed by M. Marolles to John of Cologne, who printed at Venice in 1474; the Abbé Rive attributes it to John Koelhof, a printer at Cologne, and a contemporary with the former, from whom we have a work dated in 1472. It is, however, of little consequence who was the origi-

name, &c., on the whole, signatures are rather a clumsy expedient, merely to direct the binder in folding the sheet, and are generally made too conspicuous upon the page.

One of the chief improvements in the style of typography has been the dismissal of abbreviations and connected letters from the founts. Formerly abbreviations were very common: the word *the* was indicated by the letter *y* and a small *e* above it; the conjunction *and* was indicated by *&*, which is a contraction of *et*. There were many of this species of abbreviations in printing both the English and Latin languages, and these were not more unseemly than the connected letters; such, for instance, as the junction of the letters *c* and *t* by a curve stroke from the top of one to the other. In recent times, all these connected letters have been disused, with the exception of *ff* and *fl*, because the head of the common *f* would press against the *l*, and be broke. Another very great improvement has been effected in the dismissal of the long *s*, in the case of two of this letter coming together.

STEREOTYPING.

We may now offer a brief explanation of the process of stereotyping, which has been of immense service to literature. Stereotyping is the manufacturing of fictitious, or as the word signifies *solid*, pages of types, and the invention is generally attributed to a Mr William Ged, of Edinburgh, about the year 1725. When the art was properly made known, it was hailed with acclamation by the printing and publishing world; but as experience developed its powers, it was found to be strictly applicable only to a particular kind of work.

When a page is intended to be stereotyped, the same process of putting up the types is gone through that we have already described; instead, however, of being carried to the press, the page is plastered over with liquid stucco to the thickness of about half an inch, so that a level cake is formed on the surface of the types. As soon as the stucco hardens, which it does almost immediately, the cake is separated from the types, and, on being turned up, shows a complete hollow or mould-like representation of the faces of the types, and everything else in the page. There being no longer any use for the types, they are carried off and distributed. As for the cake, it is put into an oven, and baked to a certain degree of heat and hardness, like a piece of pottery. It is next laid in a square iron pan, having a lid of the same metal, with holes at the corners. At the bottom of the pan there is a movable plate, called the *floating plate*; and upon this plate, which has a smooth accurate surface, the mould is placed with its face downwards. The lid being now placed and held tightly on by a screw, the pan, by the assistance of a crane and other mechanism, is immersed in a pot of molten type-metal—a composition of lead, antimony, and block tin—and being allowed to fill by means of the holes, it is at length taken out and put aside to cool. On opening the pan, a curious appearance is presented. The metal has run into the mould side of the cake, and formed a thin plate all over, exhibiting the perfect appearance of the faces of the types on which the stucco was plastered. Thus is procured a plate, or fictitious page of types, not thicker than the sixth of an inch. When the plate comes out of the pan, it is in a somewhat rude state, and has to be carefully pruned at the edges, its little specks picked clean, and, if necessary, one or more bad letters cut out, and replaced by soldering in the heads of movable types. The plate is also planed upon the back, in order to reduce all the plates of a sheet to one uniform thickness, by means of an ingenious rotatory cutting machine upon which it is fixed.

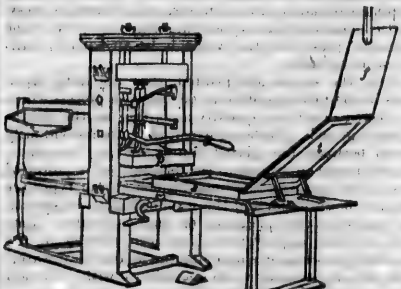
The stereotype plates, so prepared, are next taken to the printing-office, and made ready for press. This is done by placing them upon iron or wooden blocks, so that both plate and block make up the exact height of a page of real types. They are fixed to the blocks by the aid of small metal catches at the sides, head, and foot, which catches are held fast by slips of furniture properly wedged. Notwithstanding the great care taken in making the plates level, and of a uniform thickness, it is seldom that they are perfect; and to make them as accurate as possible for a fair impression, scraps of thin pasteboard or paper are placed betwixt them and the blocks at the thinnest parts. When the impression is completed, the plates are unfixed, packed up, and laid aside for future use. Now for the specific utility of stereotyping.

In all cases of common book-work, it is best to print from types to the amount of the copies required, and then distribute the types; but in most cases of books published in parts, sheets, or numbers, stereotyping becomes absolutely necessary. It is easy to perceive the reason for this. When books are published in numbers, it often happens that many more copies are sold of one number than of another; and unless the types be kept up to complete sets in the hands of the publisher, or to print copies according to the increased demand, a serious loss is sustained. The manufacture of stereotype plates is, therefore, simply a means of keeping up fictitious types to answer future demands, at an expense greatly inferior to that of keeping the actual pages standing, or of putting the types up anew.

Another important advantage of stereotyping is, that any number of *sets* of plates can be cast from the same types, and these plates sent to be printed in different parts of the world. Thus a work set up and stereotyped in Edinburgh, may be printed without the expense of recomposing in London, Paris, New York, or any other city to which the stereotype plates may be sent; and this without any risk of error or deviation from the original—a feature scarcely to be obtained by the use of movable types. In illustrated works this advantage is especially noticeable—casts of an expensive woodcut, for instance, being readily obtained for the use of several and simultaneous publications.

PROCESS OF PRINTING.

The duties of the compositor do not involve the process of printing. When the forms are duly prepared in the composing-room, they are carried into the press-room, where they come under the charge of the pressmen. The earliest printing-presses were exceedingly rude, and seem to have resembled the common screw press, with a contrivance for running the form under the point of pressure. This must have been not only a laborious and slow operation, but one exceedingly defective, from the difficulty of regulating the impression, and the risk of injuring the faces of the types. The defects in these original presses were at length remedied by an ingenious Dutch mechanic, Willem Jansen Blaew, who carried on the business of a mathematical instrument maker at Amsterdam. He contrived a press, in which the carriage holding the form was wound below the point of pressure, which was given by moving a handle attached to a screw hanging in a beam having



a spring, which spring caused the screw to fly back as soon as the impression was given. This species of press, which was almost entirely formed of wood, continued in general use in every country in Europe till

the beginning of the present century. With certain lever powers attached to the screw and handle, it is represented in the preceding column.

In connection with this representation of the old common press, the process of printing may be described. The form, being laid on the sole of the press (*s*), is fixed at the sides, so as to render it immovable from its position. There are two men employed: one puts ink on the form either by means of stuffed balls or by a composition roller—the other works the press. The latter lifts a blank sheet from a table at his side, and places it on what is called the *tympan* (*t*), which is composed of parchment and blanket stuff, fitted in a frame, and tightened like the top of a drum (and hence its name), and which, by means of hinges connecting it with the sole, folds down like a lid over the form. As the sheet, however, would fall off in the act of being brought down, a skeleton-like slender frame, called a *frisket* (*f*), is hinged to the upper extremity of the tympan, over which it is brought to hold on the paper. Thus the frisket being first folded down over the tympan, and the tympan next folded down over the form, the impression is ready to be taken. This is done by the left hand of the pressman winding the carriage below the *platten* (*p*) or pressing surface, and the impression is performed by the right hand pulling the handle attached to the screw mechanism. The carriage is then wound back, the printed sheet lifted off, and another put on the tympan, the form again inked, and so on successively. In the above engraving the press appears with the frisket and tympan sloping upwards, ready to receive the sheet, the frisket being sustained from falling backwards by a slip of wood depending from the ceiling. One of the greatest nicetics connected with this art, is the printing of the sheet on the second side in such a manner that each page, nay, each line, shall fall exactly on the corresponding page and line on the side first printed. To produce this desirable effect, two iron points are fixed in the middle of the sides of the frame of the tympan, which make two small holes in the sheet during the first pressure. When the sheet is laid on to receive an impression from the second form, these holes are placed on the same points, so as to cause the two impressions to correspond. This is termed producing *register*; and unless good register is effected, the printing has a very indifferent appearance. Expert workmen perform these operations with surprising rapidity, though with considerable labour. Two men employed at a press take the process of pulling and inking for alternate quantities. After the forms are wrought off, they are washed in a solution of potash to remove the remains of the ink, which is of a thick oleaginous character, and then carried back to the composing-room to be distributed. This last operation is very speedily performed by the compositors.

To suit paper for printing, it is necessary to wet it some hours previous to its being used. This is done by dipping alternate quires in water, and afterwards pressing the mass with a heavy weight, or by the screw or the hydraulic press, till the whole is in an equably half-dry or damp state.

After the sheets are printed, they are hung upon poles in the printing-office to be dried—a process which is effected slowly or speedily according to the degree of heat applied. On being dried, they are individually placed between fine glazed boards, and in this condition subjected in a mass to the pressure of a powerful press. On removal, the indentations of the types are found to be levelled, and the whole sheet to be smooth and ready for the operations of the bookbinder. Latterly, a great improvement has been effected in the smoothing process, by employing the hydraulic or water-press, which gives an enormous pressure with little aid from manual labour. (See HYDRAULICS, Vol. I.)

INK AND INKING-ROLLERS.

Much of the beauty of good printing depends on the quality of the ink, which it requires considerable skill to manufacture. The ink used by the earliest printers was of such excellent quality, that in many instances it remains intensely black to this day; but a long period afterwards elapsed during which very bad ink was employed. Within the present century, great improvements have taken place in the composition of printing ink, which is now produced of a good quality in London by several manufacturers; it is, however, still inferior to the finer kinds of ink used in Paris, the French having evidently surpassed the English in producing a pure and intensely-black ink which will preserve its colour. Printing ink is composed of genuine linseed oil, boiled to the consistency of a syrup, and then well mixed and ground with lampblack. The qualities desired in the composition are depth and durability of colour, and that it should be stiff without strong adhesion, and keep soft and mellow, but dry quickly after being put upon the paper. It is made of different qualities, from 1s. 6d. to 5s. and upwards per pound weight—the cheaper sorts being of an indifferent black, but working easily, and setting rapidly, while the higher-priced require both care and time in the working and drying. The colour of the work can be increased only by the quality of the ink, and the better the quality of the ink, the more time it will take the pressman to work it, and the better also may be the quality of the paper; for it is impossible to work good ink upon inferior paper. As the depth of colour depends greatly upon the degree of boiling to which the linseed oil has been subjected; and as some prefer a dead black, some a brighter black, and others a black with a little bloom on it, it is customary for parties to bring up their inks to the desired shade by the admixture of Prussian blue or indigo. In fact there is no branch of the art which has received so much attention as the inking, and, strange to say, there is none which affords more room for further improvement.

One of the greatest of recent improvements in the art of printing is in the mode of inking the forms. From the days of Guttenberg this had been done by stuffed cushions, or balls covered with skins, by which no regularity could be preserved, and no speed acquired. Earl Stanhope, when he invented his improvement on the press, attempted the plan of inking by means of rollers, but he could not discover any species of skin suitable for the purpose: all that this nobleman so anxiously desired was at length accomplished, in consequence of a chance observation of a process in the Staffordshire potteries, where rollers formed of a composition were used. A Mr Forster, employed at a bookseller's printing-office at Weybridge, was the first who applied it to letterpress printing, by spreading it in a melted state upon coarse canvas; the inventors of printing-machines soon caught the idea, and, by running the composition as a coat upon wooden cylinders, produced the perfect inking-rollers.

The composition is formed of treacle and glue, which, being heated and melted together, are poured into long iron moulds, in which the central rod has previously been inserted. The process resembles that by which moulded candles are made, the central rod being nearly in the same predicament in the one case as the wick in the other. When taken out of the mould, the roller is a cylinder of soft and elastic matter, resembling India-rubber. If required for the hand-press, it is connected with a handle after the manner of a garden roller. The ink being placed, in moderate quantity, at the back of a smooth metal table, the workman, grasping the handle, draws the roller backwards and forwards along the table, distributing a little ink equally all over its surface; and having thus diffused some ink all over the roller, he applies the same to the types, drawing it backwards and forwards over them, to make sure that all have been inked. By this plan the types are inked more equably than by the balls, and in less than half the time. As rollers formed of treacle and glue are easily injured, not particularly durable, and subject moreover to be influenced by temperature, attempts have recently been made to introduce vulcanised India-rubber and certain compounds of gutta percha, but with

what success it is yet too premature to determine. At present, the most useful rollers are those composed of glue and treacle—one part of the former to three of the latter, with the addition of about one-fourth part of Paris-white. Some persons, however, only use the simple glue and treacle, while others use a small quantity of isinglass or a few drops of sweet oil.

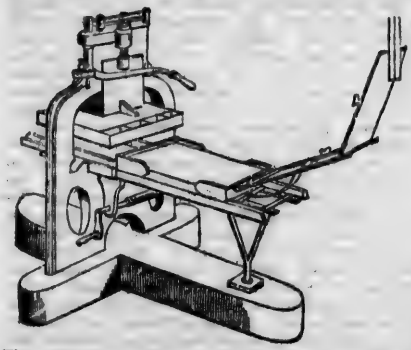
Within these few years a plan has been devised for moving the rollers over the forms by an apparatus attached to the press. Self-inking presses are now coming into use; the peculiar advantages of the invention being a more regular and uniform distribution of the ink, and the saving of manual labour.

IMPROVED PRINTING-PRESSES.

As already mentioned, the original printing-press, as slightly improved by Blaew, remained in general use throughout Europe till the beginning of the present century. Its defects were of such a nature, that it seems wonderful that no effort was made during so long a time to remedy them. The surface communicating the impression, or *platten*, was generally only the size of half a sheet, and so after one portion of a form was pressed, the carriage had to be still farther wound in, and the remaining portion pressed. The consequence was, that besides losing time, the impressions upon a single sheet were not always uniform—one part being perhaps harder pressed than the other.

At length, near the close of the eighteenth century, the celebrated Charles Earl of Stanhope applied his ingenious though eccentric mind to the improvement of the printing-press. His lordship's improvements did not go the length of altering the general form or construction of the press. He left the same plan to be pursued of winding the carriage below the *platten* by a handle and *rounce*, and of pulling the impression by the application of the right hand to the seat of power. What he accomplished was the constructing of the press with iron instead of wood, and that of a size sufficient to print the whole surface of a sheet, and of applying such a combined action of levers to the screw as to make the pull a great deal less laborious to the pressman; the mechanism altogether being such as to permit much more rapid and efficient working.

The *Stanhope press*, which is here represented, consists of a massive frame of iron cast in one piece. This is the body of the press, in the upper part of which a nut is fixed for the reception of the great screw, and its point operates upon the upper end of a slider fitted into a dovetail groove formed between the two vertical bars of the frame. The slider has the platten firmly attached to the lower end of it; and being accurately fitted between the side guides, the platten must rise and fall parallel to itself when the screw is turned.

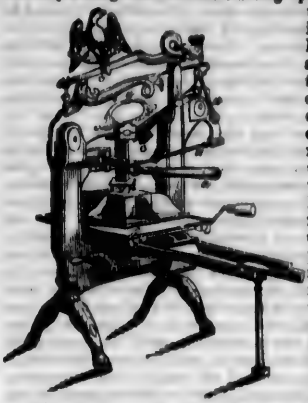


The weight of the platten and slider is counterbalanced by a heavy weight behind the press, suspended by a lever which acts upon the slider to lift it up, and keep it always bearing against the point of the screw.

There are two projecting pieces cast with the main frame, to support the carriage when the pull is made; to these rails are screwed, and placed exactly horizontal for the carriage to run upon, when it is carried under the press to receive the impression, or drawn out to remove the printed sheet. The carriage is moved by a rounce or handle, with leathern girths, very similar to the wooden press. Upon the axle of this handle a wheel is fixed, round which leathern belts are passed, one extending to the back of the carriage to draw it in, and two others which pass round the wheel in an opposite direction to draw it out. By this means, when the handle is turned one way, it draws out the carriage; and by reversing the motion, it is carried in. There is likewise a check strap which limits the motion of the wheel, and, consequently, the action of the carriage. The principal improvement of Earl Stanhope's press consists in the mode of giving motion to the main screw of it, which is not done simply by a lever attached to the screw, but by a second lever. The main screw has a short lever fixed on the upper end of it, and this communicates by an iron bar or link to another lever of rather shorter radius, which is fixed upon the upper end of a second spindle, and to this the handle or lever by which the press is worked is fixed. Now, when the workman pulls this handle, he turns round the spindle, and by the connection of the rod the main screw turns with it, and causes the platten to descend with it and produce the pressure. But it is not simply this alone, for the power of the handle is transmitted to the screw in a ratio proportioned to the effect required at the different parts of the pull; thus, at first, when the pressman takes the handle, it lies in a direction parallel to the frame, or across the press; and the short lever (b[illegible]arly perpendicular thereto) is also nearly at rig[illegible] the connecting rod; but the lever of the sc[illegible] a considerable angle with the rod, which ther[illegible]s upon a shorter radius to turn the screw; becau[illegible] the real power exerted by any action upon a lever is not to be considered as acting with the full length of the lever between its centres, but with the distance in a perpendicular, drawn from the line in which the action is applied to the centre of the lever.

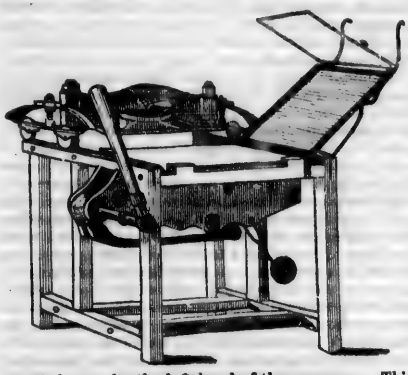
The obvious excellence of the Stanhopian improvement in gaining power for the handle, led a number of printers to apply this species of lever power to the screw of the common press, but we believe not with marked success. The improvements of Lord Stanhope were speedily followed by the attempts of other individuals in Great Britain and America to remedy the ancient defects in printing mechanism. So numerous, indeed, have these attempts been since the beg[illegible]ning of the present century, that it is quite out of our power to mention them in detail. With, we believe, one or two exceptions, all the modern improvers of the printing-press have confined their efforts chiefly to the process of communicating pressure to the platten, so as to modify labour, and procure greater rapidity of working. In these cases the screw has been generally dismissed, and power procured sometimes by the action of two or more inclined planes working against each other; in other instances by fulcrums and levers; and in others by the straightening of a joint. The latter is an exceedingly simple and beautiful form of power, and may easily be comprehended when we say that it resembles the bending and straightening of the knee-joint: when the knee of the upright bar of the press is bent, the platten is drawn up; and when the knee is forced by a lever into a perpendicular position, the platten sinks, and the pressure is communicated. This may be considered the most efficient mode of compressing the platten yet discovered, and it would be difficult to rival it in the properties of simplicity and rapidity of execution. Nevertheless, such is the number and variety of improved presses in the present day, that it would not be easy to decide upon which has the best claims to the notice of printers. Among those which have gained a large share of approbation may be mentioned the *Columbian press*, which is of American invention. This new press, a representation of which is

annexed, was brought to this country in 1818 by Mr George Clymer of Philadelphia, and made the object of a patent. The pressing power in this instance is procured by a long bar or handle acting upon a combination of exceedingly powerful levers (*a a a a*) above the platten; the return of the handle or levers being effected by means of counterpoises or weights (*e e*). For ease and facility of *pull* this press is preferred by most workmen, and certainly the powerful command which the leverage enables the workman to exercise, is favourable to delicacy and exactness of printing—his arm feeling, as it were, through the series of levers to the very face of the types.



The various improved presses which we have noticed are, in most cases, made of at least three sizes; namely, *demy*, *royal*, and *super-royal*—that is, they are respectively able to print sheets of these sizes; and they accordingly vary in price from about £50 to £80 each. They are nearly all manufactured by the patentees in London and Edinburgh. In the present day, the old wooden press of Blaew is entirely discarded from use in printing, and it is only to be seen occasionally in an obscure corner of the printing-office, reduced to the humble character of a proof-press.

The only instance worth mentioning, in which an improved press was made of quite a new construction, was in the case of the ingenious invention of Mr John Ruthven of Edinburgh. This mechanician contrived a press in which the types stand upon a fixed frame or table, while the pressing part or platten is brought over the form by being hurled forward on wheels. On being brought over the form, a depending hook or notch at each end of the platten is caught and pulled down by the combined action of levers beneath the table, and



operated upon by the left hand of the pressman. This was an exceedingly meritorious invention, and many presses on this plan were manufactured and sold; but experience has evinced that the contrivance is only valuable when applied to small presses, not larger than foolscap size, and chiefly useful for executing jobs. Mr Ruthven makes his presses as small as quarto size; and as they stand on a table, and can be easily wrought by any gentleman, no better press could be recommended to the notice of the amateur printer. The above cut presents a correct representation of Mr Ruthven's press, which, it will be perceived, is of an exceedingly compact and portable form.

THE CHAPEL.

It is worth while to remark, that till the present day the phraseology used in relation to the mechanical details of the printer possesses certain traces of the early connection of the art with men of learning. A number of the technical terms, as may be seen from the descriptions we have given, are a corruption of Latin words. We may instance *tympan*, from tympanum, a drum, and *stet* (let it stand), which is used as a mark in correcting proof-sheets. The name *brevier*, applied to a certain size of type, originated, as has been already mentioned, in that letter being first used in printing the Breviaries of the Romish Church. An exceedingly old practice prevails among printers of calling their office a *Chapel*, and under this title the compositors, pressmen, and all others engaged in the office, have been in the habit of meeting together, and forming a species of lodge, in order to settle affairs connected with the internal arrangements of the office, or any disputes which may occur among members. The general improvement in everything connected with printing establishments, and the advance of manners, have greatly modified the spirit which used to prevail in these confederacies; nevertheless, the appellation of *the chapel* remains, and is of traditionary interest. It has been supposed by many writers that the title of Chapel originated in Caxton's exercising the profession of a printer in one of the chapels in Westminster Abbey; and it is exceedingly probable that it has an origin of this nature, for printing was at first carried on in many places in England in connection with religious houses. Hence in M'Creery's poem, entitled 'The Press,' the author has the following lines:—

> 'Oh, Albion! still thy gratitude confess
> To Caxton, founder of the British Press:
> Since first thy mountains rose, and rivers flowed
> Who on thine isles so rich a boon bestowed?
> Yet stands the chapel in yon Gothic shrine
> Where wrought the father of our English line.
> Our art was hailed from kingdoms far abroad,
> And cherished in the hallowed house of God;
> From which we learn the homage it received,
> And how our sires its heavenly birth believed.
> Each printer hence, howe'er unblest his walls,
> E'en to this day his house a Chapel calls.'

LAWS AFFECTING PRINTERS.

The proprietors and printers of newspapers, though entirely free from the oppressive censorship which prevails on the continent, are nevertheless subject to various laws, enforcing the mode of publication, the use of stamps, and payment of advertisement duties; but printers of books, or any common species of work, are practically left at liberty to carry on their business in any manner or way that seems suitable to themselves. Each printer, however, by the act 2 V., c. 12, is required to print upon the front of any sheet, if printed on one side only, or upon the first or last leaf of every book consisting of more than one leaf, his name, place of abode, and business; penalty for omission £5, and the like penalty for dispersing any such publication without the imprint. But no actions for penalties can be instituted except in the name of the Attorney or Solicitor-General for England, or the Queen's Advocate in Scotland. On the whole, the allied businesses of printing, publishing, and bookselling in Great Britain may be regarded as altogether free—that is, as subject to no restriction which impedes the circulation of whatever a man chooses to write, provided it be not libellous, treasonable, or of a grossly immoral tendency, and even then such offences can only become subjects of after prosecution. Copyright,

as a matter of property, is very justly protected for a term of years; but otherwise, since the abolition of the royal prerogative to print the authorised versions of the Bible and Book of Common Prayer, there is no preventive to the freest and fullest application of the printing press, unless perhaps the duty on paper, which acts indirectly as a check and obstruction.

PRINTING BY MACHINES.

After all the ingenuity of Lord Stanhope and that of his successors had been lavished on the press, still the process of printing could not be executed but with considerable fatigue, and at a rate of speed seldom greater than that of throwing off 250 impressions, or 125 complete sheets, in an hour. It must appear evident that this was a state of things quite incompatible with the advancement of knowledge, and the necessity for producing a large quantity of impressions in a short space of time, particularly as regarded newspapers. It became apparent that an entire revolution was required in the structure of the press; that the flat printing surface should be discarded, and cylinders brought into use. We have now to describe how this great modern invention, applied to printing-machines, came to be adopted:—

In 1790, Mr Nicholson, the editor of the 'Philosophical Journal,' procured a patent for certain improvements in printing, which patent embodies almost every principle since so successfully applied to printing-machines; and although he did not carry his views into practical effect, little has been left for subsequent engineers to do, but to apply, in the most judicious manner, the principles he laid down in his patent. He may therefore be justly considered as the originator of the great modern improvements in printing machinery; for with him originated the idea of taking the impressions from types by means of cylinders, and of inking the forms with rollers instead of balls, which constitute the two most essential parts of all effective modern printing-machines.

Whether Mr Nicholson's ideas were known to Mr König, a German, is now uncertain; but to him is due the distinguished merit of carrying steam-printing first into effect. Mr König, conceiving it possible to apply steam-power to produce accelerated speed with the common press, after various unavailing efforts to obtain assistance from the printers on the continent, came to England. Arriving in London about 1804, he submitted his scheme to several printers there with no better success, until introduced to Mr Bensley, senior, who, attracted by Mr König's plans, entered into arrangements with him. After persevering for some time in various attempts to accelerate the speed of the common press, and at the same time render the attendance of the man who inks the types unnecessary, his exertions resulted, to use his own words, 'in discovering that they were only employing a horse to do what had been before done by a man.' He, in consequence, gave up all idea of his projected improvements of the common lever press, and turned his attention to CYLINDRICAL PRINTING.

After continued experiments for some years, a small machine was made, in which the two leading features of Nicholson's invention were embraced (the cylinders and the inking-rollers), which he exhibited to Mr Walter, proprietor of the 'Times' newspaper; and on showing what further improvements were contemplated, an agreement was entered into for the erection of two machines for printing that journal. Accordingly, on the 28th November 1814, the public were apprised that the number of the 'Times' of that date was the first ever printed by machinery, steam-propelled. At this period but few persons knew of any attempts going on for the attainment of this object; whilst among those connected with printing, it had often been talked of, but treated as chimerical.

After the utility of cylindrical printing had been thus proved, it was thought highly desirable that the principle should be applied to printing fine bookwork, where accurate register is indispensable. This was, to a certain extent, attained by using two large cylinders, the sheet of paper being conveyed from the bottom of the first cylinder (where it had received the first impression) by means of tapes, leading in a diagonal direction to the top of the second cylinder, round which the sheet was carried till the second side was printed. The first machine of this description was erected at Mr Bensley's office, where it continued at work for some years, till more modern machines superseded it.

So sanguine were the patentees (Mr König, Mr Bensley, and Mr H. Taylor) that no further improvement could be effected, that in March 1817 they issued a prospectus, offering three kinds of machines at high prices, and requiring a considerable annual premium; but we believe these offers were not embraced.

In the course of 1816, Mr Napier and Messrs Applegath and Cowper took out patents for improvements in cylindrical printing machinery. Mr Napier's invention consisted principally in using grippers instead of tapes, as in König's, for seizing hold of and leading the sheet of paper round the cylinders. Ingeniously as this machine was constructed, the principles upon which it worked caused it to give way in general estimation to those of Applegath and Cowper. These mechanicians' patent, which expired in 1832, referred principally to the application of two drums placed betwixt the cylinders to insure accuracy in the register, over and under which the sheet was conveyed in its progress from one cylinder to the other, instead of being carried, as in König's machine, in a straight line from the one cylinder to the other; and the mode of distributing the ink upon tables instead of rollers—two principles which have secured to machines of this construction a decided preference for fine work. Machines of this construction were made by Applegath and Cowper for the principal printing establishments in London, Paris, Edinburgh, and many other cities; and it is nearly upon the model of their machines that other manufacturers now construct their steam-presses for the execution of ordinary bookwork.

Printing-machines are now made of various kinds, adapted to the peculiar descriptions of work for which they are required. These descriptions of work may be classed under two distinct heads: namely, the printing of newspapers, one side at a time, and the printing of a better kind of sheets, or bookwork, both sides at a time. There can be nothing more easy than to make a machine capable of first printing one side of a sheet of paper, and afterwards the second, by the removal of one form, and the introduction of another; but this process will not produce *register*: the second side may or may not be on the back of the first, and the work is therefore of a very inferior appearance, though suitable enough for newspapers, in the working of which despatch is chiefly required. This kind of press is therefore the best adapted to gain that end; for the first side of the paper may be printed deliberately, and the second side be made up to the last moment of time, and then thrown off. To produce a machine to print both sides at a time, and with perfect register, no small degree of mathematical accuracy, and no small share of ingenuity in the mechanician, are required. The great and important object to be attained in this kind of machine is to cause the sheet, after it has received its first impression, to travel along the sides of the cylinders and drums at such a rate as to meet the types of the second side at the exact point which will cause the second side to fall with perfect accuracy upon the back of the first. To accomplish this exceedingly desirable end, the cylinders and drums must revolve at precisely the same speed as the carriage underneath; and therefore any inaccuracy in the turning of the axles, the cutting of the teeth of the wheels, or any other deficiency, however slight, will produce ill-registered sheets, and create an enormous degree of vexation to the printer. With these explanatory remarks, we pass on to a notice of four different machines, calculated to produce register

and non-register sheets, under various modifications and rates of speed:—

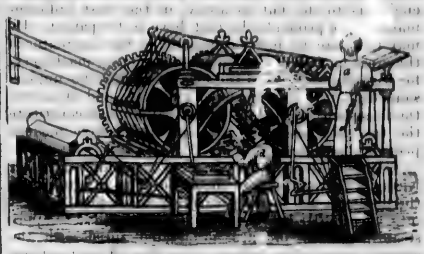
1. A machine with one cylinder, called a single machine, generally used for printing newspapers; it throws off from 800 to 1200 an hour on one side, requiring two boys—one to lay on the paper, and another to receive it when printed.

2. A machine with two cylinders, called a double machine, but only printing from one form of types, at the rate of from 1000 to 2200 an hour, requiring two boys to lay on the sheets, and two to take them off, exclusively used for newspapers. It consists of two small cylinders, about ten inches in diameter, placed about five inches apart, and suspended from a beam at each end. A camb, or eccentric, causes the beams to vibrate, and with them the cylinders to rise and fall about one-half of an inch. The cylinders turn in opposite directions, and as the machine only prints one form at a time, that cylinder only which is turning in the same direction as the types is permitted to rest upon the form, and take the impression, so that a sheet is printed by each cylinder alternately every time the type-carriage goes backwards or forwards. Two boys feed the paper into the machine, as two drums placed about three feet above the carriage, and the sheet is led down to the cylinders by tapes, which also convey it, after being printed, to the end of the machine, where two boys receive the sheets, and lay them straight in a heap, ready to be again put through the machine when the second form is placed on the type-carriage to print the other side. There is a distinct and complete apparatus for inking the types at each end, similar in principle to that which is mentioned in the account of the book machine. Many of the largest-sized and best newspapers are printed by machines of this construction. They are generally moved by manual labour, two men turning a winch, which operates upon the mechanism and fly-wheel.

3. A machine similar to that used by the 'Times,' with four printing cylinders, requiring the attendance of eight boys, and throwing off about 4000 impressions an hour. To attempt to describe this machine without diagrams is difficult, but a general idea may be conveyed of its principle, by its being considered as two double machines placed in contact. There are four printing cylinders, about nine inches in diameter each, placed close together in pairs, but with a space of about seven inches between the centre ones, in which space there are two inking-rollers. Each pair of cylinders is secured to the ends of two strong beams by means of adjustable connecting rods; to these beams a slight vibrating motion is given by means of cambs, so as to cause the alternate cylinders to rise and fall about one-fourth of an inch. The type-carriage and inking-tables have a reciprocating motion, and the movements are so adjusted, that those two alternate cylinders shall be depressed, and press upon the types, whose motion coincides with the carriage, and of course the other two alternate cylinders are by the same means raised sufficiently to permit the types to pass free under them, till the carriage changes the direction of its motion, when the position of the cylinders is reversed, and the pair which formerly took the impression from the types are in their turn raised. Thus every time the form of types moves backwards or forwards, two sheets of paper are printed. The paper is fed into the machine over four drums, placed in pairs over each other, at a considerable height above the machine, by four boys. The sheets are led down from the drums to their respective cylinders by means of broad tapes, and by other tapes they are conducted out to the ends of the machine, where they are received by four other boys, when printed, ready to be again passed through the machine to receive the impression on the second side.

This ingenious machine has only two inking apparatuses, one situated at each end. There are three pairs of inking-rollers, one pair at each end, close to the two outer cylinders, the remaining pair being placed between the two centre cylinders. The inking-tables are about three feet wide, and the motion of the carriage is sufficiently long to bring each table not only under its respective pair of inking-rollers, but also to enable each table alternately to ink the centre pair. Thus the form is first inked by one of the outer pairs of rollers; the first cylinder is raised; in passing under the second, an impression is given, and of course the ink is taken from the form, but it immediately becomes inked anew by the centre pair of rollers; the third cylinder is raised; the form passes to the fourth cylinder, where another impression is taken; and the motion of the form being continued a little farther, it gets again inked from the outer pair of rollers at the opposite end of the machine from where it started. In its return, the two cylinders which had just taken the impression are raised; the other two now print in their turn, the inking process going on as before; and two sheets are again thrown off. Machines of this complex description are only used where extraordinary despatch, in the production of a large number of copies, is required. Few, besides those employed by the London daily papers, are in use. The only one in Scotland, as far as we know, is that used for printing the 'North British Advertiser,' and which was made by Morton and Son, machine-makers, Leith Walk.

4. The fourth kind of machine is called a book or perfecting machine, printing both sides of the sheet in register before it leaves the machine. The machine from which the annexed engraving is taken is one of this description, and bears a resemblance to that of Applegath and Cowper. It is about sixteen feet long, by



five broad, and consists of a very strong cast-iron framework, secured together by two ends and several cross bars. To this frame all parts of the machine are fixed. In external figure, as seen in the cut, it is a large apparatus, of imposing appearance. On approaching it when at work, we perceive two cylinders, as large as hogsheads, revolving on upright supports; two smaller cylinders or drums revolving above them; and beneath, within the framework, a table on which lie the types at both ends, going constantly backward and forward. A belt from a steam-engine, acting upon a shaft in the frame, gives motion to the whole apparatus. It will further be observed that a boy, marked *a* in the cut, is standing on the top of some steps feeding in sheets of paper, each of which, on being delivered, is swept round the first cylinder *b* (being held on by tapes), gets its impression below from the types, is carried over and betwixt the drums above, and then brought round on the second cylinder *c*; now it gets its second side printed, and issuing into the space between the cylinders, is seized by the boy *d*, who lays it on a table completely printed. The whole operation is accompanied with a loud noise, from the revolving of the cylinders, the working of the notched wheels, and the driving of the table to and fro by a rack beneath, but without any strain on the mechanism, or risk of injury to the attendants. On minutely examining the parts, we observe that at each end there is an apparatus of rollers taking ink from a ductor or reservoir of that material, and placing it upon a portion of the moving table beneath; here other rollers distribute it, while others take it off and roll it upon the pages of types, ready for each impression.

The two printing cylinders are nearly nine feet in circumference each, and are placed about two feet apart. They are accurately turned, so that the surfaces of the type-carriages and the cylinders may be perfectly parallel. The axis of each cylinder works in brass bearings in the upright framework, where, by means of screws, the degree of pressure with which the cylinders are allowed to rest upon the types may be regulated to any degree of nicety. Over about two feet of the circumference of each cylinder which forms the printing surface, two folds of cloth, called blankets, are stretched by means of rollers placed inside the cylinder. The lower blanket is seldom changed, but the upper one, on the second cylinder (which stands in the stead of what are called slip-sheets in hand-press printing), must be shifted as soon as the ink which it has absorbed from the printing on the first side of the sheet begins to set off, or soil the paper when receiving the second impression. This shifting is speedily effected, by unrolling a sufficient quantity of the cloth off one roller, and winding it up on the other, to present a clean portion to the printing surface.

The cylinders have a continuous rotatory motion towards each other, given by two large toothed wheels, whilst the type-carriages move backwards and forwards under them. The movements are so contrived that the type-carriages shall have gone and returned to the same point during the period that the cylinders have made one entire revolution; consequently, each successive impression is taken from the types by the same part of each cylinder; and thus, in order to bring the impression level, the same facility for patching or overlaying is afforded as at the hand-press. The two drums placed between the cylinders are for the purpose of causing the sheet of paper to pass smoothly and accurately from one printing cylinder to the other.

To preserve the sheet in its proper place on the cylinders, and carry it forward through the different parts of its journey from the hand of the one boy to that of the other, there is an extensive apparatus of tapes, some of which are observable in the cut. These tapes are half an inch broad, and are formed into series of endless bands, arranged at certain distances apart, so as to fall into the interstices and margins of the forms, and therefore escape being crushed between the types and cylinders. The machine may be stopped at any instant by turning the handle of a lever, which shifts the belt from the fast to a loose pulley, without stopping the engine.

To produce an impression with a flat surface from a large form, requires a force of about from forty to fifty tons; and even with a cylinder, where a line only is impressed at a time, the pressure is little short of a ton. But, in the machine, to prevent any undue pressure of the cylinders upon the forms, there are wooden bearers, of the same height as the types, screwed upon the sides of the carriages under the ends of the cylinders; thus effectually shielding the types from the enormous and injurious pressure which a cylinder might, through accident or otherwise, be caused to exert.

Seven machines such as has been described are constantly employed printing the works of Messrs Chambers at Edinburgh, the whole, together with three flat-pressure machines, and two self-inkers, being moved by a steam-engine of twelve-horse power. At the large printing establishment of Messrs Clowes and Son in London, we believe at least twenty machines of this kind are to be seen daily at work.

Besides those various descriptions of machines above alluded to as being principally in use, there are others calculated to execute work of a more peculiar nature. Perhaps the most wonderful of those ingenious pieces of mechanism is a machine which has been made to print two colours by only one impression—a lower form charged with one colour being caused to rise through and come upon a level with another form, so that both may be printed at once. Hitherto the work which has been executed by this machine has consisted chiefly of the stamp-duty marks for the Excise, and for bank-notes, fancy labels for druggists, and other similar jobs.

A machine for printing newspapers (on one side at a time) has also come into use, constructed by Carr and Smith of Belper, on the plan of an advancing and retiring cylinder, while the table for the types is stationary. It is more easily turned than the other kinds of newspaper machines, and is said to be exceedingly suitable for printing newspapers of a limited number of impressions, such as are issued in many country towns.

Another cylinder machine which we may here notice is one invented by Mr Cowper, intended to print from convex stereotype plates. The plates, instead of being fixed flat upon blocks, as will shortly be described, are fastened upon the cylinders, so as to give them a bent form, and the printing is effected with the face of the plate or type-surface downwards; wherefore the paper is placed undermost instead of uppermost, as in all other printing. We have never heard what are the peculiar advantages of this fanciful contrivance.

Among recent inventions of this kind may also be noticed Hill's patent printing-press, by which it is said from 1200 to 1500 impressions per hour can be worked off with less labour and exertion than are required by the common hand-press to work off 300 impressions. This machine is on the cylinder principle; the supply and distribution of ink are effected by the table and types running under the rollers in the ordinary manner, and the chief novelties in construction consist—*first*, in the arrangement for moving the type table; and *second*, in the apparatus for taking off the sheets when printed. When the machine is small, motion is given by means of a treadle, which the pressman works with his foot, whilst his hands are employed in laying on the sheets; in presses of larger dimensions hand-wheels may be used; and in establishments where steam-power is employed, any number of these presses may be driven by an overhead shaft. The manner in which impressions are taken is as follows:—'The form of types being fixed and made ready for printing, and motion being given to the wheel, the pressman connects the motion of the wheel to the axis of the printing cylinder by a sliding clutch; he then lays a sheet on the register-plate, with its front edge and one of its ends in contact with a guide, and on the printing cylinder arriving at a certain position of its revolution, the front edge of the sheet is secured to the cylinder by claws, which carry it round to meet the types and receive the impression. By the time the impression is completed, the cylinder has brought the front edge of the sheet within the claws of the removing-arm, which claws then close and secure the sheet; and simultaneously beneath, the cylinder claws open, and allow the sheet to pass from the cylinder by the removing claws, and to be deposited on a shelf ready for being removed by hand. On the end of the cylinder spindle outside the frame there is a crank-iron, which pushes back the type-table after an impression has been taken; and on its arriving at its most backward position, the crank-arm quits its connection with the table, and a connection takes place between the end of the printing cylinder and the edge of the type-table, by which means a firm contact takes place between the two surfaces, which produces the forward motion of the tables and types to produce the impression.' In both of these respects the simplicity of construction and working efficiency of the machine are such as apparently to leave nothing more in the shape of improvement to be desired.

Extra-fast Machines.

Astonishing as the powers of any of the above machines may appear, they are infantile in comparison with what has been exhibited by more recent inventions. Among these inventions—successful and partially successful—we may point to those of Messrs Little and Applegath:—To explain the advantages of Mr Little's *Double-Action Machine*, it must be remembered that by the 'Fast Machine,' such as is used for printing the daily newspapers, the impression is obtained by

four cylinders, two of which revolve constantly in one direction, and the remaining two constantly in an opposite direction: thus only two sheets of paper can receive an impression from the "form" of type with each passage of the table—the cylinders, when giving the impression, necessarily travelling in the same direction as the table; hence although the form passes under the four cylinders, two of these are alternately idle, and the machine consequently produces only *two* printed sheets with every backward and forward motion of the type.

'The Double-Action Machine'—we abridge from the Mechanics' Magazine—'works with *eight cylinders*, six of which have a reversing motion, and it produces *seven* printed sheets with every transverse motion of the type. Thus in the "Fast Machine," only half the cylinders actually print alternately, whilst in the latter, *seven* out of *eight* of the cylinders are constantly at work; so that, supposing both machines to have the same number of cylinders, the Double-Action Machine would, from this circumstance alone, produce nearly twice the quantity of printed sheets; but on comparison it will be seen that considerably more than twice the number can be produced.

The surface of the type, it is known, rests on a horizontal table, which is moved backward and forward by a pinion working in a rack beneath the table. This rack, terminating at each end in a semicircle of a certain diameter, has consequently, besides its traversing motion, a lateral motion, at the time of which the progress of the table may be considered as neutral, or, in other words, the operation of printing is at a "standstill" until the pinion has passed round the end of the rack, causing a considerable loss of time during several thousand revolutions. Thus to print *twenty thousand* sheets by the present Fast Machine, the pinion must pass *five thousand times* round each end of the rack, which, with a rack of six inches diameter, is equal to a space of 15,000 feet. To print *twenty thousand* sheets by the Double-Action Machine, it is evident that, as *seven* sheets are produced from each passage of the table, the pinion will have to pass round each end of the rack only *fourteen hundred and twenty-eight* times, equal to a space of 4284 feet, or 10,716 feet less than in the Fast Machine. Another source of gain in the Double-Action Machine arises from the cylinders being diminished in size, and by working them as closely together as possible, the present four-cylinder machine requiring a rack of *six feet*, whilst the Double-Action Machine, with twice the number of cylinders, requires a rack of only eight feet, which, multiplied into the number of revolutions required to work *twenty thousand* copies, is about equal to 5712 feet.

It has been stated that the Double-Action Machine has eight cylinders, and that seven printed sheets are produced from each passage of the types. Of these eight cylinders, six only have a reversing motion, or revolve backward and forward; each of the end cylinders lifts and revolves constantly in one direction, like the cylinders of the present Fast Machine. The reason why the end cylinders differ from the other six is this: in consequence of the reversing motion of the six cylinders, it is necessary that a certain interval of time should elapse to allow the sheet in work to get clear off before the next sheet can be allowed to enter. To effect this, the table must traverse a certain distance beyond the extreme vibrating cylinder; and advantage is taken of this space to place a lifting cylinder, which does not require the type to pass beyond its centre—thus giving one sheet more from each end of the machine, amounting to 2856 during the working of 20,000 sheets. This will explain how seven sheets only are produced from eight cylinders, each of the end cylinders producing only one sheet, whilst the remaining six produce two each, from one revolution of the rack or table.'

The advantages of Mr Little's machine are said to be—1. Rapidity of action, being capable of yielding 15,000 impressions an hour, with eight cylinders; 2. An improvement in the quality of printing, since the rate of going may be diminished, and yet the numbers thrown off exceed those by the common Fast Machines; 3. More perfect register, since six out of eight cylinders are not disturbed by lifting; 4. Better inking, as the rollers, from the increased length of table, have more time for distribution; and, 5. More certain feeding of the sheets, since at each drum arrangements are made for double laying-on.

With regard to Mr Augustus Applegath's new machine which has been constructed for the 'Times,' we abridge the following notice from that paper, 29th December 1848:—'The great improvement which has now been effected by Mr Applegath, is the substitution of a uniform rotatory motion for the horizontal reciprocating motion of the old machines. It is the change from a plane to a circular "table." Instead of being laid on a table traversing a railroad, the types are now built up, as it were, on the face of a cylinder revolving on a perpendicular axis. This cylinder is a drum of cast-iron, about 5 feet 6 inches in diameter. The "forms," or pages of type, are made segments of its surface, just as a tower of brick might be faced with stone. Eight printing cylinders, forty inches in circumference, are arranged round the drum. Instead of the four impressions taken by the old machine in its double journey, eight sheets are now printed in every revolution. Any one who knows the immense weight of metal type, and the impossibility of giving it any hold upon the "form" besides weight and pressure, will at once perceive the extent of the obstacle overcome by giving the central drum a vertical position. In the vertical disposition there is the same centrifugal impulse as in the horizontal, but it does not operate in the direction of gravity, and therefore is more easily neutralised. This is done chiefly by means of the "column rules," which make the upright lines dividing the columns of the page. These "column rules" are usually long strips of brass, and in this instance they are so screwed to the sides of the iron frame, or "chase," as to become powerful tension ties; and being made with a wedge-like section—that is, thicker towards the outer surface of the type—they keep it in its place, like the keystone of an arch, or the stone ribs of a rubble vault.

Without the aid of drawings it is difficult to convey an idea of a machine so different from those on the horizontal principle. On entering a large room, the first thing that strikes the eye is a circular gallery about 25 feet in diameter, and 6 feet from the ground, surmounting eight large and complicated fabrics radiating from a central tower or drum. Each of these fabrics is the feeding apparatus attached to one of the eight printing cylinders. On the gallery are seen eight men at so many "laying-on-tables," feeding the machine, by carefully pushing successive sheets into its eight mouths, each man at about the rate of one sheet in four seconds. Directly under those men are eight others on the ground, employed in taking-off and piling the printed sheets thrown out by the machine. The eye soon detects the four forms or chases of type fixed on the face of the drum, and accommodated to its shape, and vainly attempts to follow numerous sheets of paper in rapid and inexplicable motion. The printing cylinders surrounding the central drum, and in occasional contact with it, bear about the same visible proportion to it as the pillars of the temple of Tivoli to the circular wall within. The framing which supports the central drum also carries the bearings of the eight printing cylinders, which all revolve in perfect correspondence. The type only covers a small portion of the circumference of the drum, and in the interval there is a large inking-table fixed, like the type, on its circular face. This table communicates the ink to upright inking-rollers, placed between the several printing cylinders—the rollers, in their turn, communicating the ink to the type. So far the arrangement is perfectly simple, the machine being in fact composed of the parts in ordinary use, only made circular, and placed in a vertical instead of a horizontal position.

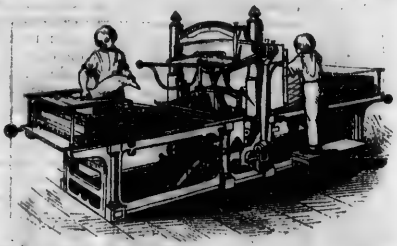
The great problem for the inventor was the right mode of "feeding," or supplying the sheets of paper to the printing cylinders in their new position. The reader will easily understand by spreading out a sheet ("The Times newspaper"), the difficulty of changing it in less than four seconds from a horizontal to a perpendicular position, and back again; and through still more changes of direction. No alteration has been made in the manner of "laying on" the paper, which is carried from a plane table in the usual way, downwards between two sets of endless tapes in rapid motion. But when the sheet has travelled down to a certain point, it is suddenly stopped by thin pieces of wood placed edgeways, and brought into contact with the paper on both sides at once; it is at the same moment released from the tapes, and, being now at rest, is held in a vertical position between the thin pieces of wood, or "stoppers;" these stoppers are then withdrawn, and the sheet hangs for a moment suspended between two small pulleys called finger rollers; a set of vertical rollers (between the stoppers), revolving rapidly, are immediately brought into contact with the sheet, and impel it horizontally between two new sets of endless tapes, which convey it round the printing cylinders. It there meets the type, receives the impression, and is led out under the feeding-gallery into the hands of the "taker off," who draws it down and lays it on a table before him.

It now only remains to explain how an even and clear impression is obtained from a segmental surface of type. The printing or impression cylinders are 40 inches in circumference, and each cylinder always touches the type at the same corresponding points, the surfaces moving with equal velocity. The blanket or cloth round the printing cylinders is underlaid or packed out with slips of paper; and by this simple means, and the use of a type cylinder of large diameter, an impression is obtained, to use the words of the patent, "not discernible from that given by a flat form of type." The rate at which this machine has hitherto been worked is about 1000 revolutions per hour, or 8000 impressions. This rate will be gradually increased until it is ascertained how far it may be urged without injury to the impressions, and danger to the delicate and complicated fabric. The horizontal machines, with four cylinders, have been driven up to 6000; and it is probable that this machine with eight cylinders will be ultimately worked to 12,000 copies an hour.'

Flat-Pressure Machines.

We have now described the advantages of cylinder printing, and it is but proper that we should mention certain drawbacks to its universal use. The pressure by a round or cylindrical surface is less perfect than that given by an even surface. The cylinder has the effect of pressing partly on the edge of the type, both in coming up to the impression and in leaving it; therefore the impression, in technical language, is not clean; it has a slight blurring, or wants that degree of sharpness and fairness that is required in fine bookwork. Cylinder printing, from the same cause, wears down types much more quickly than flat presses. A fully more important defect is the time required to prepare a sheet of types, or forms, for the machine. A sheet, such as the present, seldom requires less than four hours to make ready, and a sheet of stereotype plates two hours longer. The pressure of the cylinders is so searching, that the smallest defect in the levelness of the forms or of the blanket and printing surface is observable, and must be remedied by putting patches beneath the outer blanket. So much time is thus consumed in preparing a sheet for the cylinder machine, that it would be a positive loss to print anything at it, unless a very considerable number of copies were wanted. In other words, cylinder machines are only suitable for long impressions, and where a moderate fineness of work is sufficient.

These deficiencies of the cylinder machine have led to numerous and expensive attempts to apply steam-power to machines with flat printing surfaces. The most successful of these attempts has been one by an American, and another by a gentleman in London, whose machines have been working for some years in Mr Spottiswoode's printing-office. The latter is by far the best, and is now coming into general use. It consists of an upright frame and printing platten, resembling the common hand-press, with a type-carriage at each side. The type-carriages go below the platten alternately; so that, in point of fact, the apparatus is two presses with one printing surface to serve both. The movements to and fro of the type-carriages, and the pull downwards of the platten, are effected by machinery beneath. The forms are also inked by an apparatus for the purpose. This machine requires a layer-on and taker-off of sheets at each end, besides a superintendent, and works about 700 sides per hour, or 350 complete sheets. Since the expiry of the patent,



machines of this kind have been made by J. Brown and Co., engineers, Kirkcaldy. The mechanism is very beautiful and effective, answering every purpose of bookwork in ordinary demand. Three machines of the Messrs Brown's construction are employed in the establishment from whence this sheet proceeds: the preceding illustration represents the latest and most approved form of arrangement—the type-tables travelling horizontally, as in the cylinder machines, and the platten rising and falling with undeviating accuracy at the return of each table.

By the introduction of the steam-presses which we have now described, the profession of the printer has within these few years undergone a most extraordinary revolution; and although perhaps fewer hand-pressmen are now employed than formerly, the increase of employment to compositors, engineers, bookbinders, booksellers, &c. must be very great. The principal advance in the profession has been since the year 1832, when the printing of cheap literary sheets rose into importance; and, by a fortunate coincidence, the patents of various machines having about the same time expired, a new impulse was given to the trade. Hardly a newspaper is now anywhere printed with a hand-press, and few or no periodical publications. The making of printing-machines has in itself become a great business. One maker in London some time ago mentioned to us that he produced a machine regularly every three weeks upon an average all the year round, each at a price of about £400. Other manufacturers in London, and also now in Scotland, are similarly engaged; the machines being sent not only to all parts of Europe, but to America, Australia, and India. In a few years there will not be a civilised country of any consequence on the globe which does not possess these powerful distributers of human knowledge.

It will readily be supposed that the introduction of a steam-press such as we have described has caused a very extensive alteration both in the dimensions of many printing-offices and in their organisation. Printing is now a manufacture. The printing-office is a factory; and the interior of one of these concerns usually presents a remarkable spectacle of industry, animate and inanimate, which to a stranger leaves a lasting impression on the memory.

ENGRAVING—LITHOGRAPHY—PHOTOGRAPHY.

In the preceding sheet we endeavoured to describe the process of producing impressions from movable types, generally known as *letterpress-printing:* in the present, we direct attention to the allied, but more difficult and delicate arts of producing impressions from engravings on wood, copper, steel, and other metals, from drawings on stone, and by the action of the sun's rays on chemically-prepared substances.

WOOD-ENGRAVING.

The method of taking impressions, or printing from woodcuts, being precisely the same as that followed in ordinary letterpress, we commence with a brief account of the art of Wood-Engraving, or, as it is sometimes more learnedly termed, from Greek and Latin compounds, Xylography and Lignography. In doing so, our aim will be to afford such information as may serve at once the purposes of the general reader, and of the individual who may be desirous of acquiring some skill in the practice of the art.

During the last twenty years, it will have been observed how great has been the increase of works containing wood-engravings, either for the purpose of illustration or embellishment. The illustrations throughout the present work belong to this species of engraving, and few publications of a cheap class are now issued without them. Usually less delicate and minute than engravings on copper or steel, woodcuts possess a peculiar value from the comparative ease with which they can be printed. While plate embellishments require to be produced by a process so tedious, that a man can with difficulty execute 250 impressions in a day, a wood-engraving can be printed with great rapidity by a machine to the extent of many thousands daily. The chief value of the woodcut, however, consists in its being adapted for printing along with letterpress. It is inserted among the types by the compositor, and impressions come from it along with the letterpress which it is intended to illustrate. Hence a woodcut is to be described as a *type*—a thing which produces representations by being stamped on paper, after having been inked for the purpose. The reason why wood-engravings possess these qualities over metal plates is, because the figures or marks to be shown in print are left raised on the wood, the parts not to be printed being cut away. This is the reverse of the principle of metal-plate engraving, in which, as will hereafter be seen, the figures or marks are sunk, and hence the difficulty of effecting impressions with any degree of rapidity. Another peculiar advantage arises from the fact, that stereotype casts can be obtained from woodcuts as readily as from movable types, thus giving the printer the power to multiply them indefinitely.

The art of carving figures in relief on the face of a piece of wood, and then stamping the figures, blackened with ink, on paper, or some other light fabric, is of great antiquity. The Chinese have for ages stamped or printed books in this rude manner. In Germany, the first attempts at printing with a press were effected by wooden blocks, which, however, were soon abandoned, in consequence of the invention of printing by movable types. Previously, the subjects stamped in Germany were for the greater part of a devotional kind, such as representations of saints, for distribution by the clergy as aids in devotion. The earliest print from a woodblock of which we have any certain date is, or was lately, in the collection of Earl Spencer: it is the representation of St Christopher carrying the infant Saviour across the sea, bearing the date 1423. It was discovered in one of the most ancient convents in Germany—the Chartreuse of Buxheim, near Memmingnon—pasted within one of the covers of a Latin manuscript of the year 1417. It has an inscription at the bottom, which has been thus translated:—

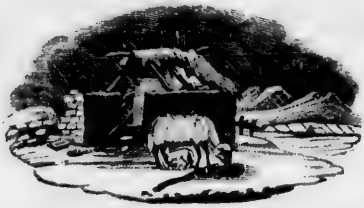
> 'In whichever day thou secst the likeness of St Christopher,
> In that same day thou wilt, at least, from death no evil blow incur.—1423.'

A reduced fac-simile of this curious engraving forms the illustration at the head of the present article. Besides being employed to illustrate devotional subjects, wood-engraving was used in Germany for marking the figures on playing-cards; and, what is somewhat remarkable, the rude figures of these early times are represented with little or no improvement of taste on the playing-cards of the present day.

As stated in the preceding sheet, immediately before, and also after the invention of printing, the practice of issuing small books composed entirely of woodcuts, representing Scripture subjects, was common in different continental countries. The people not being able to read, were in this manner impressed with glimmering ideas of sacred history. Remarkable incidents mentioned in the books of Moses, the Gospels, and the Apocalypse, were thus made known to the less-instructed classes, but generally in connection with legends of the Middle Ages. Some works of this class were called '*Biblia Pauperum*'—('Poor Men's Books'); and copies of them are now extremely rare. By such devices was the piety of our unlettered forefathers excited: the instruction being communicated to the understanding through the eye, as it is now more generally conveyed through the ear.

Wood-engraving, for the sake of illustrating printed copies of the Scriptures, was brought to extraordinary perfection by Albert Durer at the end of the fifteenth century. Instead of hard outlines, the figures were now finely shaded, and an elegant picture produced. Throughout the sixteenth century the art flourished in Holland, Germany, and Italy, and had many eminent professors. As printing advanced, it may be said to

have declined; the eye and the feelings were less appealed to than formerly; the intellect of the people was opening, though, it may be admitted, their taste was not correspondingly improved. Towards the conclusion of the seventeenth century, the art of wood-engraving had fallen into neglect; but in the eighteenth century it began to revive in France and England, and some good illustrations were produced. It remained, however, not in a brilliant condition, till it was taken up by Thomas Bewick of Newcastle-on-Tyne—an extraordinary self-taught enthusiast in the art. Bewick began a series of illustrations for a history of quadrupeds about 1785, and the work, when issued in 1790, attracted much attention. This work, and others on natural history, executed by Bewick, were remarkable for possessing an order of small engravings on wood called *tailpieces*, from being given at the terminations of chapters. Many of these sketches abounded in dry humour, and were highly relished by the increasing body of general readers. Here, for example, we give a copy of one of these tailpieces—a poor ewe, in the starvation of winter, or rather anticipated spring, picking at an old broom in front of a ruinous cot—a scene,



trifling as it seems, which tells a woful tale of suffering. Wood-engraving was now raised to the rank of a regular profession in England, and was greatly advanced by Nesbit, Harvey, Branston, and Thomson, both as respects elegance of design and delicacy of execution. In France and England its professors have latterly been numbered by hundreds.

Practice of Wood-Engraving.

The Wood.—The pieces of wood employed in wood-engraving are usually termed *blocks*. These are invariably of the box-tree—a species of wood exceedingly fine in the grain. The tree is cut across in slices with a fine saw, and the slices, after being planed smooth on the surface, are cut into square blocks of the required size. The blocks must be exactly one inch in depth—such being the height of the printing-types in which they are to stand. When a block of more than from six to eight inches square is wanted, it is necessary to join two or more pieces together, as the box-tree is too limited in diameter to furnish blocks of a large size. Blocks ready for use, of any required size, are to be had from the carpenters who supply printers with furniture for their presses, likewise from turners of fine wood, and other tradesmen. The price of a block of medium quality and size may be purchased for tenpence or a shilling per pound—a pound of wood yielding a printing-block about six inches square.

As in every other article, there are good and bad qualities of wood: that which is preferable ought to be as smooth on the surface as the finest paper, perfectly level, perfectly dry, and of a uniform yellow colour, without knots or flaws. When the tint is a darkish-red, the wood will most likely prove brittle; and when very light, it may be spongy, and will absorb ink when the cut comes to be printed. Some of the light-tinted wood has the appearance of satin-wood. Upon this no attempt should be made to engrave, it being utterly useless. Wood of various colours—as, for instance, that which is dark in the middle of the disk, and gradually getting light towards the edges—if not well-dried or seasoned, is also not good; when of this kind, the cuts will warp, and be useless to the printer. After being used, the printer, for his own sake, should carefully wash and dry the blocks, and lay them safely aside for another occasion.

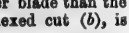
Tools.—The following are the articles required by the engraver on wood:—

1. A round flattish pad, made of leather, and filled with sand, on which to rest the block while engraving it. 2. Gravers.—A graver is a tool about four inches long, made of steel, with a small head or handle of wood. One side of the handle is flat, to allow the tool to rest steadily when set down. The blade, or steel part of the tool, is various in shape; some blades are thin, others are thicker. As it is the point of the blade which cuts, the sharper the blade is, so

may the edge be ground fine in proportion. Six or eight degrees of fineness are usually employed; the finest being for the more delicate lines and markings, and the broader-pointed for cutting broad and bold lines. One or more of the gravers require to be slightly bent in the blades, as shown above, to permit excavating hollowed parts. The shape of the point of this tool, as seen on its upper side, is here represented (*a*). 3. Tint-tools.—These are tools of various degrees of fineness, suitable to the fineness or coarseness of the tint required to be cut. While

a

it is the object of gravers to cut lines in various directions, and of various lengths, also markings of a miscellaneous kind, tint-tools are chiefly employed to cut parallel lines close together, representing the tints of the sky. The tint-tool has a thinner blade than the graver, and, as is shown in the annexed cut (*b*), is much more tapering and sharp at the point. 4. A flat or gouge-tool, for cutting away blank spaces at the edges, and trimming the cut. 5. A



b

hone or Turkey stone, on which to sharpen the various tools, and bring their edge to any required degree of slope. 6. A steel burnisher. 7. An inking slab, a dabber, and a small quantity of fine printing ink, as afterwards specified. 8. India paper, on which to take proofs. And lastly, two or three fine and hard black-lead pencils.

A sufficient stock of the above-mentioned apparatus, of fair quality, for an amateur learner, need not cost above twenty or thirty shillings.

Drawing the Subject.—Equipped with the proper tools and a few small blocks, the learner is ready to begin his operations. There is, however, something to be done preliminary to engraving: this is the drawing of the figures to be engraved on the wood. The ability to draw with neatness and precision, also a knowledge of effect in light and shade, are indispensable in the amateur wood-cutter, or any one who desires to rise in the profession. There are indeed wood-engravers who do not ordinarily draw, the designs being put on the blocks by artists of celebrity, but to this class we do not address ourselves. We are solicitous that no one who wishes to instruct himself in wood-engraving should think of making the attempt till he can draw on the wood the subjects which he intends to execute. This degree of skill is not alone necessary for the purpose of rendering wood-engravers independent of artists; it is also requisite to enable them to give effect to the designs which artists put on the wood. Sometimes the designs are not made by black-lead pencils, but by various shades of India ink, laid on with camel-hair pencils; and the effect of these various shadings requires to be brought out by lines and marks of different kinds—all the invention of the engraver.

Besides mere drawing, modern improvements have added another branch to this department of the art, which is called 'lowering.' The surface of the block being perfectly level, it is obvious that, while being

printed at a press equally true and even, every line left standing on the cut receives an equal degree of pressure. The finest lines forming a sky, for instance, receive an equal weight and impress with the deepest and broadest shadow. Now this is manifestly not as it should be; for fine lines ought to be printed lightly, and dark ones heavily. To obviate this, in printing the commoner class of cuts, the pressman lays small patches of paper below his sheet, opposite the spots to be printed more darkly than others; but this mode of patching fails to a considerable degree in making fine work, and a surer plan for bringing up the effect at press, consists in slightly lowering certain parts of the surface of the block. This may be effected as follows:—Sketch the design on the block, and then scrape away with the scooper those parts to be printed lightly; for example, the sky, and the edges of trees, the whole in various degrees, according to the degree of required lightness. We desire to add, that beginners should not trouble themselves with this process, as it applies only to an advanced class of exercises. If lowered, the designs will require to be re-sketched on the wood; but whether lowered or not, the surface of the block must be prepared in the manner now to be described:—

The surface of the block being too smooth to receive the markings of a pencil, it is roughened, and at the same time delicately whitened all over with moistened powder of Bath brick and flake white, and the palm of the hand is afterwards passed over the block, to remove from it any gritty particles. When dry, it is ready for the drawing, which is now put upon it, care being taken that nothing is marked which is not to stand in relief. On being finished, the drawing appears to be a minute and perfect sketch on a white ground.

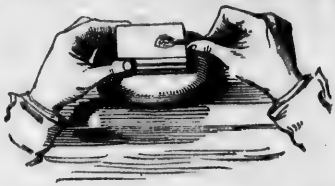
Besides being able to draw, the learner should be acquainted with the practice of copying and reducing from prints. For example, a wood-engraving 3 inches long by 2 inches broad is required to be made from a print 12 inches long and 8 inches broad. In this, as in all other cases, it is necessary to copy everything in exact proportion. A square frame, on which threads are stretched lengthwise and crosswise, leaving square openings, is laid on the print. Small squares to the same number are now lightly traced on the wood, and whatever parts lie within any opening in the frame are copied within the corresponding opening on the wood: thus a copy in exact proportion is obtained.

As pencil-drawing is very apt to be blurred or partly effaced by touching with the hand, it is necessary to cover the block, while working upon it, with a piece of paper. A slip of smooth, hard writing-paper is the best for this purpose: it should be neatly folded over the edges, and tied firmly round with a thread. On beginning to cut, tear off a piece of the paper from the part to which the tool is to be applied; and so remove the paper as the work proceeds.

Engraving.—Persons with weak sight use a strong magnifying-glass when engraving, or when closely examining the appearance of their work. We would recommend beginners to avoid using a glass, if possible, for it injures the sight with the naked eye. Persons with ordinary eyesight require no glass in wood-cutting. The work may be best executed with a strong steady northern light. In cutting by lamplight, a shade should be employed to throw the light down; and the light may be concentrated by being made to shine through a globe of water, the rays coming to a focus on the block.

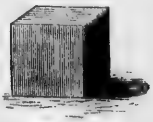
The engraving is done at a table or bench of convenient height, placed below or near the light just mentioned. The engraver, seated on a chair, holds and moves about the block on the pad with the left hand, while he operates with the tool in the right, as is represented in the following cut. Great steadiness of hand is of the utmost importance, for the least cut in a wrong direction may mar, if not ruin, the effect to be produced. Until the learner becomes familiar with his tools, he should proceed gently and patiently, pushing the graver cautiously forward at a uniform depth, and clearing out small chips or threadlike parings.

In picture-painting, innumerable tones, tints, lights, shades, nearness, and distance, are produced by apply-



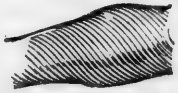
ing a variety of colours, and any error can be rectified by a new touch of the brush. In wood-engraving, every kind of effect must be produced by a mere variation in the marking, first with the pencil, and afterwards with the graver; the result in printing being a variety of dark marks and lines on a white ground. The skill of the wood-engraver is therefore tested to no mean degree. On the careful and judicious disposition of his lines, and the lightness and strength of his masses of darkened parts, depend the entire effect of his labours. In executing a woodcut, the parts drawn upon remain, and the blank spaces which the pencil has not touched are cleared away.

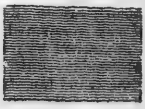
The first lessons of a learner should consist in engraving straight parallel lines with a tinting-tool, as are here exemplified. The degree of darkness is



regulated by the thickness of the lines, and the spaces cut out between them. Take care that the lines are cut smooth and clean, free of ruggedness or breaks.

Not till pretty well grounded in the art of cutting straight parallel lines, should the learner proceed to the next steps in advance, which will consist in cutting bent and waving lines. The following cuts exhibit the nature of this progression. Having cut one or more





of these early exercises, the parts of the block not to be printed must be lowered with a flat or gouging-tool, so as to leave no parts so high as the lines. The depth to which the blank-spaces or 'whites' must be cut is regulated chiefly by their extent—the larger the space, the deeper the gouging.

Perfected in the art of cutting lines straight, bent, and waved, the learner may proceed to cross-hatching, which consists in cutting lines at different angles, and of different lengths, across other lines, with the view of expressing graduated depths of shade. The varieties of hatching are endless, from light tones up to the darkest shadows. The annexed figure of a hand represents a familiar variety of cross-hatching.

These specimens are given more for the purpose of showing what cross-hatching is, than of inducing learners to prosecute this kind of engraving. Cross-hatching should always be sparingly employed, and in no case when an effect can be attained by simple lines; for it introduces complexity, and often too much minuteness

of detail. 'A good engraving,' as Jackson observes, 'viewed as a *work of art*, is *not* good in proportion, as many of its parts have the appearance of fine lace.' With this caution, it should be mentioned that if cross-hatching is found indispensable, the learner will require to execute it with particular care; for there is a difficulty in cutting out the whites, so as to leave continuous lines sweeping across, as in the above figure. If possible, rest the tool on the whites afterwards to be cut away; and when nothing remains as a fulcrum, a small piece of card may be laid on the block as a protective. Take care, also, not to undermine any already cut lines; for if undercut, they may break off in printing; and what is equally objectionable, will not admit of sound stereotype casts.

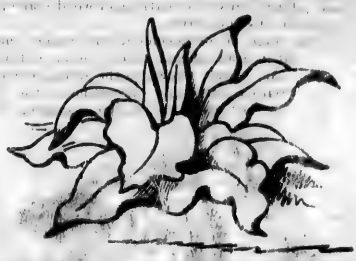
Apparent faults in wood-engravings can with great difficulty be remedied; and it is better for them to remain, or to execute another engraving, than to attempt improvement. Experienced engravers are sometimes able to correct errors in their cuts by what is technically called 'plugging.' A small piece of wood is dexterously drilled out of the block, and a new piece is inserted in its stead, and glued, to prevent shifting. On this new piece the correction is executed.

Taking Proofs.—When an engraving is finished, the workman will be gratified by seeing how it looks on paper; and this gratification he can afford himself without the aid of the printing press. The materials necessary for this operation are, as already stated, a small quantity of the finest printing ink; a smooth stone or slab to distribute it on (the back of a large strong earthenware saucer will, however, answer the purpose); a dabber, composed of wool, tightly tied up in white leather or fine silk; some India or Chinese paper; a burnisher; and a piece of card. Having smeared a small quantity of ink on the dabber, beat it for some time on the stone, that it may be distributed equally over the surface. Holding the cut steadily on the sand-bag, strike it gently with the dabber, taking care not to use any pressure whatever; the ink will thus be imparted evenly upon the *surfaces* of the lines without descending to their sides. Having cut a piece of India paper to the required size, breathe upon its smoothest side, lay it on the block, place the card on the back of the paper, and commence rubbing the back of the card with the burnisher. A very steady hand is requisite to do this effectually; for if the India paper be allowed to move, the lines will be blurred or doubled. When every part of the object on the block has been sufficiently rubbed, the operation is finished, and the proof may be removed.

A precaution may be necessary in taking proofs by the above plan—which is, to leave a border of the whites standing round the edge of the block, as something for the hand and the burnisher to bear upon. To prevent the black mass (which will of course be inked with the rest) from appearing on the finished proof, a rough one must be taken first, and the subject of the engraving cut out of it with scissors. After inking the block for the clean proof, the black border must be covered with what is left of the first impression, which protects the former from the ink during the burnishing process. Of course the border on the block must be cut away in finishing the woodcut for press.

After using, the slab should be cleaned with lye of potashes, or turpentine, and the dabber must be kept clean and soft. If these precautions are not attended to, the proofs will soon become coarse in appearance, and the cuts will be clogged. The most perfect dabber is the ball of the hand; but few will choose to soil their hands with printers' ink. Cuts are cleaned most effectually with turpentine, and they should be carefully dried before being put aside.

Outline Figures.—In commencing to cut figures and scenes, it is advisable to copy from wood-engravings of a simple and expressive kind. Almost all beginners commit a serious mistake in attempting to imitate the finer class of wood-engravings, which abound in minute marking. They should learn to bring out an effect in light and shade *with as few lines and hatchings as possible*, never making two or more small marks where one of a bolder stretch would answer. The earliest exercises attempted should only be in outline, as is exemplified in the annexed engraving of the leaves of a plant. In this instance it will be observed what effect

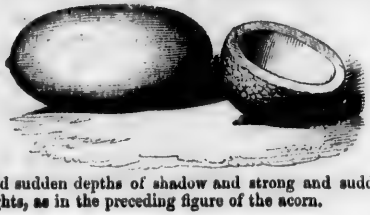


is produced by a few thin and thick lines, with a very slight degree of shading.

Outline figures, or such as have but a few touches of shading, as in the annexed, may also at this stage

of advancement be engraved. In this example the lines are few, firm, and distinct, and the effect vastly superior to what could be produced by elaborate, but indifferently-executed shading. In proceeding to execute figures with shading, it is advisable to begin with those possessing few details, and as little complicated in subject as possible. Perhaps something like the following might be copied with advantage:—

Another class of exercises consists in cutting sketches of round and oval objects, in which there are strong



and sudden depths of shadow and strong and sudden lights, as in the preceding figure of the acorn.

It will be observed in these examples, as well as in other cuts of a simple class, that three gradations of shade require to be studied. After the pure white comes the lightest shading, consisting of only a few scratches: next we have the gray or middle tone: lastly, we have this mid tone shading down to the pure black. Pure blacks are portions of wood scarcely, if at all, touched by the graver.

About this stage of advancement the learner may exercise himself in drawing and cutting foliage of different kinds. As is well known to the draughtsman, foliage is represented differently, according to the nature of the tree. In the accompanying sketch, the

willow is represented by perpendicular markings, terminating in a point, to give the idea of its pendent foliage. A broad mass of light is usually preserved, and an increase of markings is given to one side of each subdivision of foliage, with considerable power of characteristic markings on the shade-side of the tree, besides an occasional repetition of touch for effect.

Advanced Exercises.—After outlined and shaded figures, the learner may proceed to figures with shadings and backgrounds, requiring a variety of light and dark lines. In beginning figures or objects with backgrounds, it is necessary to cut an outline round it, as a boundary to other lines coming against it; but this outline should not be seen in the impression of the engraving. This outlining prevents the figure from appearing to adhere to the background, and is indispensable.

In this department of study the learner may engrave human figures, animals of different kinds, and rural and street scenes with skies; beginning, for example, with such as have few objects, and little complexity of light and shade, as in the following sketch:—

After some practice with sketches of this nature, he may proceed to others of a more complicated kind, and in which the contrasts of light and shade are bolder, and require more delicate handling. In this, however, as in many other things, much must be left to the taste, the patience, and the skill of the engraver. Beyond this it is unnecessary to offer any hints in this brief and rudimentary description. Those who wish to pursue the profession of wood-engraving, will find it advantageous to consult the elegant and elaborate treatise of Mr Jackson. (C. Knight, London, 1839.)

Wood-Engraving as a Profession.

Wood-engraving is carried on as a profession chiefly in London, where there are some extensive establishments devoted to this line of business. In these, as in all other large concerns, it is not unusual to have a division of labour: a cut being made to go through several hands, from the drawing to the finishing. By such means cuts can be produced with surprising rapidity; but it may be doubted if this wholesale system of production is advantageous to art. The too-common failing of woodcuts is their want of character and truth. They may be neat, elegant, and highly-finished, but not striking for their fidelity, and too ambitiously imitative of steel or copper-plate engravings. Woodcuts should possess a character of their own, which cannot be mistaken; and to attain this character for his productions ought to be the aim of every artist.

Another, and perhaps more serious fault of many woodcuts, is their not being adapted to the kind of printing for which they are intended. There are now two kinds of letterpress printing, very different from each other—printing by flat pressure with the hand-press, and printing with cylinder machines, moved by steam power. At the hand-press, cuts can be worked off with the greatest possible deliberation and care; and if inked by means of soft balls, any degree of colour can be imparted to them. At the printing-machine, no such pains can be taken: a common or easily-working ink must be employed; the rollers run over the *forms* with uncompromising speed; and the cylinders, turning out ten or twelve sheets per minute, give a depth of impression which is fatal to delicacy of lines. Now the misfortune is, that wood-engravers do not sufficiently study these distinctions. In sending home their cuts to their employers, they give along with them proofs on India paper, which look exceedingly beautiful; and if the cuts were to be printed on India paper with fine ink, the work would be quite answerable. Such, however, is not the case. Perhaps as many as nine-tenths of all the cuts executed are for machine-printing, with which it is impossible to do them on all occasions justice. Hence the many blurred and ineffective cuts which are seen in books, all the tones being confounded, and often only a gray haze pervading the work. Not that these cuts are badly executed, but that they are suited to an entirely different process of working.

We mention these circumstances with the view of doing all in our power to inspire amateur learners with a correct idea of the deficiencies as well as the excellencies of wood-engraving in its present state of advancement. We wish to show them not only what they should attain, but what they ought in prudence to avoid. Already it has been stated that, without a knowledge of drawing, all attempts to prosecute wood-engraving successfully must prove fruitless. Let us repeat and impress this fact on the mind of every one who thinks of taking a graver in hand. Let all who are deficient in this qualification procure instruction; and we know of no better seminaries than the Schools of Design now generally established throughout the country. Learn, we say, to sketch with fidelity from nature, to copy from prints and paintings, to acquire taste in grouping, and disposition of light and shade, and to design subjects in illustration of passages in stories, &c. Having acquired a certain proficiency in these departments, which involve much miscellaneous knowledge, the amateur may proceed to wood-cutting, *but not till then.*

The surmounting of so many preliminary impediments will no doubt require time and trouble; but no attainment of any value can be acquired without industry and patience. The attainment in the present instance is worthy of more than the usual degree of labour. It is the acquiring of an art which may be turned to most important uses. To those in easy circumstances, it may be a delightful and elegant exercise. To others less fortunate in worldly condition, it

may become a ready means of subsistence. There are few things on which human labour raises the value so highly as wood-engravings. A small piece of wood, worth no more than two or three shillings, may, by a few days of skilful industry, become worth as many pounds. Surely, to be able to impart this high value to an object next to worthless in its raw state, must be deemed no mean talent.

The ease with which wood-engraving can be executed within the domestic circle, peculiarly adapts it as an occupation for ladies. On this point we cannot do better than offer the following passages from an article on wood-engraving in the 'London and Westminster Review' for 1838:—'To that large portion of educated gentlewomen of the middle-classes who now earn a subsistence chiefly as governesses, we wish to point out this art as an honourable, elegant, and lucrative employment, easily acquired, and everywhere becoming their sex and habits. We have already done honour to the exquisite delicacy and elegance of the engravings of Mary Ann Williams; we venture to say that few women of taste, whatever their rank in life, can look on "Le Jardin du Paris au lever de l'Aurore" without envying the artist her power of producing a scene so beautiful, and of exciting in thousands the pleasing emotions inseparable from it. Apart from all pecuniary considerations, to be able to do it is an elegant accomplishment; and the study of the principles and details of taste which it implies, is a cultivating and refining process to every mind. All that can be taught of the art may be learned in a few lessons, and thus an acquirement made which will afford no slight protection against misfortunes to which, in this commercial country, even the richest are exposed—and a means of livelihood obtained which, without severing from home, without breaking up family assemblies, is at once more happy, healthy, tasteful, and profitable, than almost any other of the pursuits at present practised by women. The lady we have named is not alone in the practice of this art: we might name also Eliza Thomson, and Mary and Elizabeth Clint, who have furnished excellent engravings for the "Paule et Virginie;" and we have heard of several daughters of professional and mercantile men, not likely to be dependent on their own exertions for support, who have wisely, by learning this art, acquired both an accomplishment and a profession. The occupations, we may also add, are few, indeed, to which gentlewomen of this class can more worthily devote themselves, than to an art which is peculiarly fitted to enhance the enjoyments and refinements of the people, by scattering through all the homes of the land the most beautiful delineations of scenery, of historic incidents, and of distinguished persons.'

ENGRAVING ON COPPER AND STEEL.

In the printing of letterpress or woodcuts, as has been already noticed, the impressions are effected by the raised faces of the letters, or marks, in the manner of a stamp. Printing from engraved plates is performed on a principle directly the reverse: in this case the face of the metal, cleared of the ink daubed upon it, gives no representation—the printing is effected from the sunk lines. While wood-engravings may be printed along with type-matter, engravings on plates of metal require to be printed by themselves.

The discovery of the art of engraving on metal, for the purpose of making impressions on paper, is generally ascribed to Finiguerra, a goldsmith of Florence. He excelled in an art then much practised in Florence called *niello*. It was the custom with jewellers, in those times, to engrave the outlines of Scripture subjects upon the vessels which they made for the use of the church. When this engraving was completed, they filled the lines with a black substance composed of a mixture of lead and silver, in solution with borax and sulphur; and impressions were taken from this in clay or sulphur. The black substance used was called *niello*, and hence the name of the art. The same process was also used when pieces of armour, household plate, and other articles, were engraved for the purpose of being inlaid with metals, wood, or ivory.

German writers claim the honour of the invention for a citizen of Antwerp, Martin Schoengaur, asserting that he practised the art before Finiguerra. It seems probable that it appeared nearly simultaneously in both countries. The earliest distinguished engravers, after the discovery of the art, however, were Italians.

It does not appear that Finiguerra pursued his invention any further than to take impressions on paper instead of clay. A contemporary, of the same profession and city, Baccio Baldini, improved upon the invention by engraving on plates for the express purpose of taking impressions on paper. He was greatly assisted by a distinguished painter, Antonio Pollajuolo, who furnished him with designs for his engravings, and also by another artist, Sandro Botticelli, who made a set of drawings, from which Baldini engraved plates for an edition of Dante, published in 1488, and supposed to be the first book ever embellished with copperplate engravings; though this notion has been proved false by a German writer. The works of Baldini attracted the attention of a Roman engraver, Andrea Mantegna, who had already become distinguished as one of the most successful of the *niellatori*. This artist not only assisted Baldini with original designs, but also turned his own efforts to the promotion of the newly-discovered art, in which he soon became a proficient.

In our notice of the early days of the art, we must not omit mentioning Albert Durer, one of the earliest Dutch engravers. Some knowledge of the art seems to have been previously possessed in Holland by Martin Schoengaur, who is thought by some German writers, as we have seen, to have invented it, and who was certainly a contemporary of Finiguerra. The works of Martin, and his disciple Wolgemuth, inspired the genius of Albert Durer, who did much for the improvement of the art, excelling equally on copper and on wood. Marc-Antonio Raimondi, an Italian artist, having seen Durer's prints, improved upon them, and became at Rome a master in the art. Thus the profession was spread simultaneously over Holland and Italy. Although there have been various improvements in the art since this early period of its history, the mode of etching the plates remains substantially the same. At present there are several kinds of engraving practised, each effected in a different manner, and of these we shall now offer a short account:—

Line-Engraving.—This is the principal as well as the most ancient species of engraving. When not executed entirely with the graver and dry point—that is, when the lines are not cut mechanically and finished with the scraper and burnisher—it is commenced by a chemical process called *etching*. The plate is first cleaned on its polished surface, and heated sufficiently to melt a composition of asphaltum and Burgundy pitch, called etching-ground, which is rubbed upon it, and rendered equal all over, by dabbing with a ball of wool covered with silk. The plate is then held up for the surface to receive the smoke of a wax taper, until it is rendered black and glossy, into which state it comes on not being suffered to cool during the process. These preparations being effected, and the plate becoming cold, the etching-ground, which is not thicker than a coat of varnish, is found to be of a hard consistence, and ready to receive the tracing of the subject intended to be etched. The previous preparation of the subject is a very important step in the process. The subject is drawn upon transparent paper with a black-lead pencil, and being laid with the face downwards on the etching-ground, the lines or marks of the drawing are pressed upon it with such force, that they are left on the ground on removing the paper. This is called 'transferring;' and of course the excellence of the representation to be produced depends on the excellence of the drawing. Engravers, therefore, in copying paintings, require to possess a degree of skill in the art of delineation hardly inferior to that of the original artist.

The drawing being transferred in the manner described, the engraver applies his tool, or etching needle, over the lines, carefully removing the ground, at the same time pressing sufficiently hard to scratch the surface of the copper. When any error has been committed, the objectionable lines may be stopped out by working a little of the ground over them with a hair-pencil dipped in turpentine. When set, the parts so treated resist the aquafortis. A wall of wax is now placed round the margin of the plate, and into the enclosure so formed aquafortis is poured, to the depth of half an inch. This aquafortis decomposes or bites into the copper where the etching-ground has been removed. During this process, globules of air arise from the decomposition, and these are carefully removed with a feather, to allow free scope to the biting liquid. The length of time employed in biting the plate is regulated by the depth required, also by the state of the atmosphere; in ordinary cases, the operation may be performed in about an hour. When it is ascertained that the plate is properly acted upon, the aquafortis is poured off, the wall of wax removed, and the ground cleared with spirits of turpentine. The plate is now said to be etched, and when printed from in this state, exhibits the appearance of a pen-and-ink sketch. To this state of etching, but regulated by the nature of the subject, professional engravers bring the plates to be finished in the *line* manner. Different gradations of power are given by the aquafortis and parts are rebitten to the depth required; after which, the light parts are put in with a sharp needle. Other parts are then cut with gravers of various sizes and forms, suited to the lines which will best express the respective objects. The engraver, in thus finishing his work, rests the plate on a small cushion, so that it may be conveniently turned with the left hand, while the incisions are cut with the graving tool by the right. These lines are re-entered, crossed in various directions, or cut in the spaces between the diagonal crossings, until the desired effect is produced. Landscapes and architecture are generally executed with the needle and aquafortis: portraits and historical subjects are chiefly cut with the graver or burin, without the use of aquafortis. Where a series of parallel lines are wanted, as in backgrounds, &c. an ingenious machine, called a *ruler*, is employed, the accuracy of whose operation is exceedingly perfect. This is made to act on etching-ground by a point or knife connected with the apparatus, and bit in with aquafortis in the ordinary way.

As etching has become somewhat fashionable, and is now pretty freely cultivated by amateurs, either as an amusement, or with a view to illustrate discoveries in natural science, it may be well to mention that the art can be learned in a few lessons. Those who reside in large towns, will most readily acquire it under the direction of some copperplate-engraver; those who have no such opportunity, may teach themselves by attending to the directions given in Mr Alken's 'Art and Practice of Etching,' published by the Messrs Fuller, Rathbone Place, London, who also supply the entire apparatus. The apparatus is by no means costly, and consists of a few copper-plates, etching-needles, a hand-rest, a ball of etching-ground, a dabber, oil-rubber, a little rottenstone, a smoking-taper, bordering-wax, some varnish for stopping out false lines, tracing-paper, and a phial of aquafortis. The great advantage of etching to the amateur consists in the opportunity it affords him of multiplying impressions of his work. A sketch in oil or in water-colours remains single, and a copy can only be obtained by repeating the process; whereas a sketch once etched can yield hundreds of impressions, all precisely the same in every line and feature. Those who can draw in reverse proceed at once to delineate on the etching-ground; but in general it is safer to draw on paper, and transfer. Etching with a *dry point*, as it is called, is performed entirely with the point without any ground, the burr raised by the graver being taken off by the scraper—a steel instrument with three sharp edges. Engraving or etching in *soft ground* is used to imitate chalk or pencil-drawings. For this purpose the ground is mixed with a portion of tallow or lard, according to the temperature of the air. A piece of tissue-paper being attached to the plate at the four corners by some turners' pitch, and lying over the ground, the drawing is made on the paper, and shadowed with the blacklead pencil. The action of the pencil thus detaches the ground which adheres to the paper, according to the degree to which the finishing is carried; the paper being then removed, the work is bit, as in etching with the hard ground.

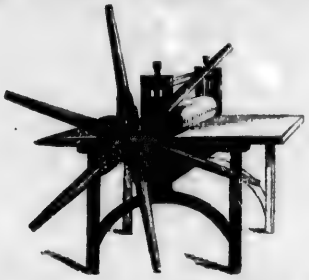
Stippling is a style of engraving in which dots of various sizes and depths in the copper, instead of lines, express the forms and shades of the subject. They are first made in the etching-ground with the needle, or with a toothed-wheel called a *roulette*, then bitten, and some parts stopped out, to prevent the further action of the aquafortis on them; while other parts receive additional bitings, till the subject has the power required. After this the plate is cleaned, dotted up with the needle, stippled with the graver, or rebitten, until all the gradations of force are communicated.

Mezzotinto is in a great measure a reversal of those styles already described, being the reducing of a darkened surface of copper to one that is light. The operation is generally commenced by grounding or puncturing the plate with a circular-faced tool, called a *cradle*, on the edge of which are a number of points; this instrument, by being rocked regularly over the surface of the copper in every direction, covers it so completely with marks, that, if it were printed from, the impression would be perfectly black. On this dark ground the subject is traced, directing where the various gradations of light and half-tint are to be scraped and burnished out, until the proper effect is produced. This style of engraving is used chiefly for portraits and historical subjects. It has a pleasing soft appearance, but it is understood that the copper soon fails in producing strong impressions, and it is therefore not well adapted for subjects of which great numbers are required.

Aquatinto engraving is an exceedingly complicated style of producing pictorial effect; but being executed at a lower price than that of the kinds previously mentioned, it is commonly resorted to for embellishing books of travels, or other works requiring illustrations of a simple nature. In appearance it resembles tinting with Indian ink, and the prints are susceptible of being finished with water-colours. In commencing the process of aquatinto engraving, the plate must be cleaned with an oil-rubber, which is a strip of woollen cloth rolled up hard, to about two inches in diameter; this, with a little impalpable crocus and sweet-oil, will give to the copperplate, when perfectly cleaned from the oil, a proper surface to receive the ground, which is made with pulverised sifted rosin and spirits of wine, incorporated by gentle heat, till it appears like a varnish. This composition is poured over the plate while placed in a slanting position, so as to permit the superfluous liquid to run off. The operation must be so managed as to preserve an equal surface. As soon as the granulation, or drying of the grain, appears, the plate must be placed horizontally, when the spirit will evaporate, and the particles of rosin will adhere to the copper. When dry, the surface appears evenly covered, as with a diminutive honeycomb, and perfectly smooth. On this the subject is traced, and the highest lights painted out with a sable pencil in a mixture of turpentine-varnish and lampblack, so as to prevent the aquafortis acting on those parts. The margin is also covered, and on it a wall of wax is fixed, with a spout at one corner. The aquafortis is regulated in its strength by the temperature of the weather and the hardness of the copper. Being poured on the plate, it remains until the first gradation of tint is bitten—the aquafortis having acted on the copper between the particles of rosin which adhered to the plate. The aquafortis is then taken off, the plate dried, and this first degree of tint stopped out or covered over with the blackened varnish. When hard, the aqua-

fortis is again poured on, to bite the second degree of tint; and so on until all the tints have in succession been bitten in. The copper must then be cleaned, and a proof taken and compared with the original. A similar or rebiting grain must then be laid on the plate as before; when cold, a composition of treacle and lamp-black, well mixed, must be used to paint the projections of foliage on lights, or other touches which the masses of tint may require. When these are dry, the whole of the plate must be washed over with a thin coat of varnish reduced with turpentine, which will adhere to the untouched parts of the work. The wall of wax must then be replaced, and clean water poured on; in a short time the water will mix with the treacle touches, and loosen them. When all appear to be removed, the water is taken off, and aquafortis poured on, and allowed to remain until a sufficient degree of power is given to the touches, and the subject completed. This mode of engraving was invented by a Frenchman of the name of St Non, about the year 1662. He communicated the process to Jean Baptiste le Prince, who died in 1781, from whom it was acquired by Paul Sandby, who introduced it, through the medium of Mr Jukes, into this country. It has been practised in England with much greater success than anywhere else, but latterly has been superseded in many instances by lithography.

Plate-Printing.—Copperplates, engraved in any of the above styles, are ready for press as soon as they are finished by the engraver. The method of printing from them is very simple. Their engraved surface is daubed over with a thick oleaginous ink, so that the lines are effectually filled. As this dirties the whole face of the plate, it is necessary to clean it, which is done by the workman wiping it first with a piece of canvas, and then with the palms of his hands, rubbed on fine whiting. It may be calculated that a hundred times more ink is thus removed than actually remains in the indentations; however, such is necessary. The plate being thoroughly cleaned, it is laid on a press (see fig.), with a piece of damped paper over it, and



being wound beneath a roller covered with blanket stuff, it is forced to yield an impression on the paper. The plate requires to be kept at a moderate warmth during the operation. The frequent rubbing of the plate with the hand to clean it, as may be supposed, tends greatly to wear it down; and such is the wear chiefly from this cause, that few copperplates will yield more than a few thousands of impressions in good order. The earliest, called *proofs*, are always the best, and most highly prized.

In consequence of this defect in copper, the practice of *engraving steel plates*, for all subjects requiring long numbers, has now become very common. This process was introduced by the late Mr Perkins of London, who originally softened the plates, engraved them, and then rehardened them—a practice now abandoned, as ordinary steel plates can be worked upon by the burin, dry-point, scraper, and burnisher with perfect facility. Etching on steel plates is executed much in the same way as in the process on copper. The plate is bedded on common glaziers' putty, and a ground of Brunswick black is laid on in the usual way, through which the needle scratches. The biting menstruum is then poured on, and managed in the manner already detailed. An engraving on a steel plate may be transferred in relief to a softened steel cylinder by pressure; and this cylinder, after being hardened, may again transfer the design by rolling it upon a fresh steel plate; and thus the design may be multiplied at pleasure.

SEAL AND GEM ENGRAVING.

This is a branch of the profession altogether distinct from that of engraving on metallic plates. While the hardest metals are susceptible of being cut by a tool wielded by the hand of the artist, the different kinds of stone required to be operated upon by the seal-engraver are so extremely hard, that a much more powerful instrument than the hand has to be resorted to. The cutting-tool is fixed into a turning-machine or lathe, and is made to operate while in a rapid rotatory motion. The lathe is of a light and miniature construction, erected on an elevated bench or table in front of the artist, and is moved by a foot-board beneath. The engraver of metal-plates sits while at his work, but the seal-engraver in general stands, in order to have greater command over his operations. He likewise requires to be exceedingly steady in the hand, for the slightest error would perhaps be irremediable; therefore, with both his elbows resting on cushions on the bench, and the palm of his left hand leaning on the top of an erect roundish-shaped bolt or pillar, his fingers of both hands are busy in pressing the stone to the edge of the whirling-tool, or guiding it so that it may receive the appropriate indentations. One tool, however, cannot execute all parts of the device. The cutter possesses from one to two hundred tools, usually of soft iron or copper, varying from a large to a small size. It is also necessary to explain that the cutting part of each tool is shaped so as to present to the stone a sharp thin edge like the rim of a wheel. (By sticking a small wafer on the point of a pin, and conceiving the edge of the wafer, when turning round, to be the cutting part, a good idea may be obtained of this curious instrument.) As the tool projects horizontally, the artist, by holding the stone beneath it, with its surface to be cut uppermost, is thus enabled to watch the progress of his operation from beginning to end.

Sharp as the cutting tools of the seal-engraver are, they would entirely fail in perforating the gems to which they are applied by the lathe, unless they were given an additional sharpness by means of a foreign material occasionally applied to them while in rapid motion. This material is usually diamond dust, or the powder of the ruby and other hard stones. The diamond is so expensive an article, that the particles used by the seal-engraver are those which have been rejected as waste by the lapidary. These being placed in a hollow steel tube, having a tight-fitting rammer of the same material, a few smart blows on the upper extremity of the rammer reduce the particles to powder. A small portion of this dust is then mixed with a little olive oil, and being held to the tool in a state of motion, it is attached to or forced into the metal. If a powerful magnifying-glass were taken to examine the tool after its absorption of the diamond dust, its edge would be observed to resemble a rasp or saw, the particles being partly imbedded and fixed in the steel; hence, properly speaking, it is not the tool, but the diamond dust upon it, which cuts the surface of the stone.

To cut an elaborate device, such as a bust or a coat of arms, upon the surface of a cornelian or other gem, a vast deal of care is necessary on the part of the artist. The precise depth of every turn and indentation is matter of serious study, and a momentary heedlessness might have the effect of ruining the work of several days. The operator, however, exercises caution in his ingenious labour. The stone being dimmed by friction, is drawn upon with a brass point, to show the subject, which is of course reversed: the artist first traces the outlines of his figures, next opens them with

the bolder tools, and gradually proceeds to the details with finer and finer instruments, frequently stopping to take impressions on wax, to see the effect which has been produced, before he gives the finishing stroke to his workmanship; lastly, the surface is repolished, and the seal completed.

It will thus be seen that gem-engraving requires not only great ability and skill, but a degree of patience and perseverance beyond what is required in most other professions. To cut a metallic seal or die is comparatively an easy task—the instruments as well as material being thoroughly under the control of the artist; but to engrave on the hardest gems, whose nature cannot be altered, and which, if destroyed, cannot be replaced—to carve the most minute and delicate figures, and to produce them in such a manner as to yield a distinct and smooth impression—is altogether an art of the highest order.

ENGRAVING AND ETCHING ON GLASS.

The name of *cut glass* is given in commerce to glass which is ground and polished in figures with smooth surfaces, appearing as if cut by impressions of a sharp instrument. This operation is chiefly confined to flint-glass (see No. 21), which, being more tough, soft, and brilliant than the other kinds, is more easily worked, and produces specimens of greater lustre. An establishment for cutting glass contains a great number of wheels or disks, seldom exceeding a foot in diameter, which are made to revolve with great rapidity by steam or other moving power. Against the circumferences or edges of these revolving wheels the glass to be ground or figured is held by the hand of the workman. 'The thickness of the cutting disks, and the forms of their edge, are varied considerably; some being broad, others narrow; some convex, others concave; some flat-edged, others wedge-shaped; and so on, according to the shape of the vessel and the figures to be produced. Even forty or fifty disks with different-shaped edges may be found in the same workshop. Materials of very different degrees of hardness, from cork to wrought-iron, are employed in the formation of these disks. Those made of wrought-iron, which are very thin, are used to cut grooves in glass, by the aid of sand and water, which are caused to drop on the circumference of the disk from hoppers placed above. Cast-iron disks are also sometimes used in the roughest part of the operation; but the coarse work is usually done by a disk of fine sandstone wetted with water. When ground down to the proper shape, the glass is polished by exposure to softer disks, the action of which is generally assisted by various powders applied in a moist state to the circumference. Thus a copper disk is used with emery and oil; a disk of block-tin with peroxide of tin or tutty; a disk of willow-wood with fine pumicestone, colcothar, or putty; and a cork disk having an edge of hat-felt with putty or colcothar.' By such simple instruments is all that variety of design—flower, fruit, foliage, arabesque tracery, initials, armorial bearings, &c.—produced which now adorns so abundantly the most familiar articles of domestic utility.

The art of *etching on glass* is altogether different, being akin to etching on plates of copper and steel. 'The art,' says Parnell in his 'Applied Chemistry,' 'may be practised on all kinds of glass; but the most proper description is good crown-glass. The facts on which this art is founded are, that the vapour of hydrofluoric acid (see No. 19) acts energetically on glass, corroding it as aquafortis does a sheet of copper, and that certain parts of the glass may be easily protected by a resinl varnish, on which the acid exerts no action except at a high temperature. The varnish usually employed by artists for this purpose is either common turpentine varnish mixed with a little white-lead, or a strong aqueous solution of isinglass. In performing the process on a small scale, purified bees'-wax will be found to form a convenient varnish.

The piece of glass to be etched is first of all warmed in a convenient manner, and one of its surfaces is then rubbed over with wax, the temperature of the glass being high enough to cause the wax to melt, and be distributed uniformly over the entire surface. The glass is then set aside to cool; and when the wax has become quite solid, the design may be traced with a pointed, but not very fine instrument, such as a bodkin. A carpenter's bradawl is a convenient tool for this operation, since, from being flattened at the end in one direction, it may be made to trace lines of different degrees of fineness, according to the position in which it is held. Care must be taken to cut through the entire thickness of the wax, so as to lay the glass quite bare through the whole length of the line.

The next part of the process consists in the application of the hydrofluoric acid. The vessel employed for this purpose is a shallow basin, either of lead or of Wedgwood's ware (no glazed vessel should be employed), large enough to include within its area every part of the design, when the prepared glass is placed upon its edge. The materials for generating hydrofluoric acid—consisting of one part of powdered fluor spar, and about two parts of highly concentrated oil of vitriol—are introduced into the basin, and well mixed; the glass plate is then laid on the edge of the basin, with the waxed side undermost, and a moderate heat is applied, to disengage the vapour of hydrofluoric acid. A spirit-lamp will be found a convenient source of heat, from the facility it affords of increasing or decreasing the temperature at pleasure. Care must be taken to prevent the heat becoming so powerful as to melt the wax-ground.

After being exposed to the acid fumes for a few minutes, the glass plate may be removed and cleaned. The lines where the wax had been removed are found to be covered with a white powder, which consists of silico-fluorides of the metallic bases of the glass. The greater part of the wax may be removed by scraping with a common table-knife, and the remainder by warming the glass before the fire, and wiping it with tow and a little oil of turpentine. The design will then be found to be perfectly etched upon the surface of the glass, the depth of the lines being proportional to the time the glass was exposed to the acid vapour. In conducting the operation, care should be taken not to allow the hands to become exposed to the acid fumes, as the vitality of the parts would be instantly destroyed by the action of the acid.' According to the authority now quoted, a dilute aqueous solution of hydrofluoric acid may be substituted for the vapour in the above process with a similar result.

Glass plates engraved upon in this manner are not adapted for printing, or yielding impressions upon paper, on account of their brittleness; but even this has been partially obviated by a German invention, wherein the glass, of considerable thickness, is cemented to blocks of wood—the plates so mounted enduring sufficient pressure to produce a fair impression without fracture.

GLYPHOGRAPHY.

An important addition to our means of producing pictures or impressions consists in the glyphographic process of Mr Palmer. The peculiar advantages of this invention—so named from its combining two distinct operations of drawing and engraving—are thus detailed by the patentee:—'The term glyphography is derived from two Greek words (*glypho*, I engrave, and *graphein*, to draw), and signifies that art by which an engraving is produced by the simple mode of drawing; or, in other words, drawing and engraving, which have hitherto been two distinct operations, are here combined in one. Hence its merits, and importance to every artist, seeing that by its aid he becomes the engraver of his own work, as much as he would by the practice of etching; but with this vast difference, that *here his effect is as immediately conspicuous as though he were using a black-lead pencil on paper;* whilst, on the contrary, effect is obtained in etching in the same manner as in line-engraving—namely, by *depth;* and that depth the etcher produces by the action of acid on

the copper, called *biting*; nor has he any means of ascertaining the real effect thus produced but by taking a proof on paper, and of course he must repeat this as often as he makes any alteration in his plate. Another material advantage which glyphography possesses over etching and wood-engraving is, that in the former the artist draws his subject as he intends it to appear, without reversing it, as is requisite in both the latter, and which is extremely difficult and perplexing, at least to beginners. And last, though by no means least of its peculiar merits, and that which makes it of the highest importance to every true lover of the fine arts, is the freedom afforded to the artist, and consequent scope for the exercise of his talent, and multiplication of fac-similes of his own work. Every connoisseur in the arts knows what sort of comparison to make between etchings and any other kind of prints, although they may be the productions of the same hand; and why? Simply on account of the stiff formality and studied regularity of the latter, which, though perhaps pleasing to the eye, are by no means natural; consequently the same facilities are here afforded as in etching, without that tediousness associated therewith, and the other disadvantages already enumerated. So tied and fettered is the wood-draughtsman, that he is obliged to leave the tints entirely to the engraver's taste and skill, contenting himself with staining with India ink, &c. that part of the block to the desired colour or tone; nor is his outline secure, unless in the hands of a clever cutter, and even then its freedom and beauty are sometimes entirely spoiled from a variety of causes; but in glyphography, on the contrary, any sort of work, whether sketchy or finished, free or formal, is introduced with equal ease (according to the skill and experience of the artist); and, moreover, what may seem strange to those unacquainted with the nature of the after-process, the more elaborate and complicated the drawing, the less time and trouble is required in its conversion into a surface-printing block, as hereafter described.

If anything further needs observation here, regarding the many advantages that this new art possesses, it is, first, the durability of the blocks, seeing that, with care, the number of proofs taken therefrom may be multiplied almost *ad infinitum*, upwards of 70,000 having been taken from one without altering in the least degree its sharpness; and next, in a commercial point of view, is its extreme cheapness, which of course is worthy of consideration.'

Such are the proffered advantages of the invention; let us now glance at the process so far as divulged by Mr Palmer:—'A piece of ordinary copper-plate, such as is used for engraving, is stained *black* on one side, over which is spread a very thin layer of a *white* opaque composition, resembling white wax both in its nature and appearance: this done, the plate is ready for use.

In order to draw properly on these plates, various sorts of points are used, which remove, wherever they are passed, a portion of the white composition, whereby the blackened surface of the plate is exposed, forming a striking contrast with the surrounding white ground, so that the artist sees his effect at once. The drawing being thus completed, is put into the hands of one who inspects it very carefully and minutely, to see that no part of the work has been damaged, or filled in with dirt or dust; from thence it passes into a third person's hands, by whom it is brought in contact with a substance having a chemical attraction or affinity for the remaining portions of the composition thereon, whereby they are heightened *ad libitum*. Thus by a careful manipulation the *lights* of the drawing become thickened all over the plate equally, and the main difficulty is at once overcome; a little more, however, remains to be done. The depth of these non-printing parts of the block must be in some degree proportionate to their width; consequently the larger breadths of *lights* require to be thickened on the plate to a much greater extent, in order to produce this depth. This part of the process, however, is purely mechanical, and easily accomplished.

It is indispensably necessary that the printing surfaces of a block prepared for the press should present in such relief from the block itself as shall prevent the probability of the inking-roller touching the intervenes of the same whilst passing over them; this is accomplished in wood-engraving by cutting out these intervening parts, which form the lights of the print, to a sufficient depth; but in glyphography the depth of these parts is formed by the remaining portions of the white composition on the plate, analogous to the thickness or height of which must be the depth on the block, seeing that the latter is in fact (to simplify the matter) a cast or reverse of the former. But if this composition was spread on the plate as thickly as required for this purpose, it would be impossible for the artist to put either close, fine, or free work thereon; consequently the thinnest possible coating is put on the plate previously to the drawing being made, and the required thickness obtained ultimately as described.

The plate thus prepared is again carefully inspected through a powerful lens, and closely scrutinised, to see that it is ready for the next stage of the process, which is, to place it in a trough, and submit it to the action of a galvanic battery, by means of which copper is deposited into the indentations thereof, and continuing to fill them up, it gradually spreads itself all over the surface of the composition, until a sufficiently thick plate of copper is obtained, which, on being separated, will be found to be a perfect cast of the drawing which formed the *cliché*.

Lastly, the metallic plate thus produced is soldered to another piece of metal to strengthen it, and then mounted on a piece of wood, to bring it to the height of the printer's type. This completes the process, and the glyphographic block is now ready for the press. It should, however, have been stated previously, that if any parts of the block require to be lowered, it is done with the greatest facility in the process of mounting.'

What progress Mr Palmer's process may be making as a substitute for wood-engraving we have no means of knowing. Very delicate and beautiful specimens of glyphography have appeared in the Art Journals; but in volumes which have been illustrated throughout by the process, and printed in the usual manner—such as Dr Lindley's botanical works—while the drawings have undoubtedly considerable breadth and freedom, the impressions are vastly inferior in delicacy and clearness to those from ordinary woodcuts.

LITHOGRAPHY.

Lithography (Gr. *lithos*, a stone, and *graphein*, to draw) is the art of printing from a peculiar kind of stone, and generally in a style which resembles the more ordinary kinds of engravings. It was invented at Munich in Bavaria, between the years 1795 and 1798, by Aloys Sennefelder, a person of literary ability, who, being too poor to pay for the printing of books in the usual manner, endeavoured to fall on a method of executing his productions from the surface of various metals. 'He found'—we quote the 'Encyclopædia Americana'—'in the course of his experiments that a composition of soap, wax, and lampblack formed a good material for writing on his plates; that, when dry, it became firm and solid, and that it resisted aquafortis. Wanting facility in writing backwards on the plates, he got some pieces of Kilheim-stone, as cheap materials on which he could practise after polishing their surfaces. One day, being desired by his mother to take an account of some linen about to be sent to be washed, and having no paper at hand, he wrote the account on a polished stone with his composition ink, intending to copy it at his leisure. When he was afterwards about to efface this writing, it occurred to him that he might obtain impressions from it; and having eaten away the stone with acid for about the hundredth part of an inch, he found that he could charge the lines with printing-ink, and take successive

impressions. This new mode of printing appeared to him very important, and he persevered through all difficulties in applying his discovery to practical purposes, and in improving it. In the course of many experiments, he found that it was not necessary to have the letters raised above the surface of the stone, but that the chemical principles by which grease and water are kept from uniting, were alone sufficient for his purpose. This point obtained, lithography may be said to have been fully discovered. The first essays to print for publication were some pieces of music, executed in 1796: afterwards he attempted drawings and writings. The difficulty he had in writing backwards led him to the process of *transfer;* and the use of dry soap, which was found to leave permanent traces, which would give impressions, naturally led to the mode of chalk-drawings.

Having made considerable improvements, Mr Sennefelder obtained, in 1799, a patent privilege for Bavaria, when he made known his process, and afterwards entered into partnership with Mr André of Offenbach, who proposed to establish presses, and take out patents in London, Paris, and Vienna. For this purpose Sennefelder went to London with a brother of André's; and the invention having been much spoken of, under the name of *polyautography*, most of the principal English artists made trials of it. Unfortunately, however, the art of printing from the stones was not then fully understood, and the difference between the materials of Germany and those of England, used both for the purposes of drawing and printing, caused constant failures; and the artists, in succession, abandoned the practice of it. In August 1800, Sennefelder, who had separated from André, went to Vienna, where, after much difficulty, a patent was obtained, and extensive preparations were made for applying his process to print cottons; but bad management, and some unfortunate circumstances, prevented his success, and he returned to Munich in 1806, leaving the establishment in other hands. Mr Mitterer, professor of drawing at the public school of Munich in 1806, practised lithography to multiply copies for the pupils, and is said to have invented the chalk composition in its present form, or at least to have improved it greatly.' From this period the practice of the art was improved and extended; from Munich it shortly spread over Germany; and from thence to France and England.

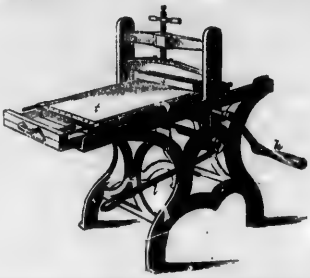
The stone employed for lithography is a species of limestone, resembling in appearance a smooth yellow hone, and is found in quarries in Bavaria; it is likewise found in France and England; but no stones have as yet been found to surpass those of Solenhofen in Bavaria. Any stone which effervesces with an acid, which imbibes water with facility, and is easily penetrated by greasy substances, is fit for lithographic purposes; the nature and quality of the work requiring a stone of corresponding quality and fitness. The best for general purposes is that which breaks with a conchoidal fracture; is of a homogeneous texture, and of a uniform yellowish white; and emits, when breathed upon, an aluminous or clayey odour. The stone, when prepared, usually varies in thickness from an inch to four or five inches; those which are large requiring the greatest thickness, in order to endure the severe pressure to which they are subjected. Of whatever dimensions, the stones require to be perfectly flat, and of uniform polish on the printing surface. For this purpose, they are sawn into blocks, polished with sifted sand and water, till they acquire the necessary *grain* or surface, if for chalk-drawings; and if for ink-drawings, they must be polished with pumicestone till they are perfectly free from grain or scratches. Stones which have been printed from must be polished afresh, to remove the old drawing; and in addition to the usual rubbing with sand and pumice, must be washed with a mixture of aquafortis and water.

The ink to be employed in making the drawings for the stone varies in composition according to the precise nature of the work, and whether the drawing is made direct on the stone, or transferred to it from paper. One kind, of a good quality, consists of dried tallow-soap, mastic, subcarbonate of potash, Chinese or table-varnish, and lampblack; the varnish being the principal ingredient. The materials are incorporated in a close vessel over a fire, and when prepared, are cast into moulds. The substance taken from the moulds forms a chalk, which may be pointed like a pencil, or it may be dissolved in water to form an ink. Hullmandel recommends an ink composed of the following ingredients:—2 ounces tallow-candle, 2 ounces virgin-wax, 2 ounces shell-lac, 2 ounces common soap, and lampblack enough to bring it to the colour required. This composition is prepared and incorporated as the preceding. As it is more difficult to work with chalks than with inks, greater care is required in the preparation of the former; hence the proportions of the mixture may be varied so as to produce a mass sufficiently firm, without being dry, and also without having a tendency to clog to the stone. The ink used by the printer is generally composed of burnt oil or varnish, and lampblack, with a small proportion of indigo to bring up the colour.

The drawings, we have said, are either executed at once on the stone, or are taken from transfer paper. In the former case, the drawing is reversed; in the latter, it is done in the natural order, and appears reversed when transferred to the stone. In either case, the drawings are made by the pencil of chalk, or by ink and a fine pen or camel-hair pencil. 'To render the lithographic process intelligible'—we quote the 'Penny Cyclopædia'—'let it be supposed that the artist now completes a drawing with the chemical chalk just described, upon a grained-stone. If, while in this state, a sponge filled with water were passed over the face of the stone, the drawing would wash out, the chalk with which it is made being, as we have seen, soluble in water, by reason of the soap which it contains. Before, therefore, it is capable of yielding impressions, a weak solution of nitrous acid is poured over it, which unites with and neutralises the alkali or soap contained in the chalk, and renders it insoluble in water. After this, the usual course is to float a solution of gum over the whole face of the stone; and when this is removed, if a sponge and water be applied to its surface, as before supposed, the drawing is found to be no longer removable, because the chalk with which it is executed is now no longer soluble in water. In this state the work is ready for the printer, who obtains impressions by the following process:—Having thrown with the ends of his fingers a few drops of water on the stone, and spread them with a sponge, so as to wet, or rather damp, the whole surface equally, the printer finds that the water has been imbibed by the stone only on those parts not occupied by the drawing, which, being greasy, repels the water, and remains dry. A roller properly covered with printing-ink is now passed over the whole stone, which will not even be soiled where it is wet, from the antipathy of oil and water. But the parts occupied by the drawing being, as we have seen, dry and greasy, have an affinity for the printing-ink, which therefore passes from the roller, and attaches itself to the drawing. In this state it is said to be charged or rolled in. Damped paper is then put over it, and the whole being passed through a press, the printing-ink is transferred from the stone to the paper, and this constitutes the impression. By repeating in this manner the operations of damping the stone and rolling in the drawing, an almost unlimited number of impressions may be obtained. Now, as we have said, the modes of lithography are various, but the illustration just given will explain the principle of them all. It consists in the mutual antipathy of oil and water, and the affinity which the stone has for both—that is, in its power of imbibing either with equal avidity.' The art, in whichever way pursued, requires great delicacy and dexterity. In drawing on the stone, the slightest mark of the hand will fasten on the surface, and appear in the impression. The execution of the impression in an

equally clear and dark manner is evidently a matter of difficult accomplishment, there being nothing more common than to see lithographic impressions light at one part and dark at the other. One of the chief disturbing causes is variation of temperature; and it is always prudent to make a few trials before proceeding to regular work; as the stone and ink which worked well in the morning, may in the afternoon produce nothing save intolerable blotches.

The *process of printing* differs from that of letterpress or copperplates. The stone, properly inked, and with paper over it, lies in a box on the table of the press, covered by a piece of leather (*t*), and is drawn beneath a hard edge or scraper (*s*), the mechanism being assisted by a lever power (*l*), as is shown in the accompanying figure. As in other kinds of printing, it is



necessary that the pressure be equally distributed; and for that purpose the edge of the scraper requires to be smooth and true, and the leather of uniform thickness.

Etchings upon stone are executed much in the same way as etchings upon other material. The stone having been previously polished, is washed in a solution of acid and water, and dried; a very small quantity of gum-water and black is laid on the stone with a rag, so as to form a thin coating. When this is dry, the drawing must be traced with red chalk, or taken in transfer, as the case may be, and executed with etching-needles. It must be remembered that these lines or scratches, which of course appear white, will seem much thicker when filled with printing-ink; this arises from an optical deception, proceeding from their change of colour from white to black. Great care must be taken not to breathe on the stone, as this would dissolve the coating of gum. When the etching is finished, the entire surface of the stone must be rubbed with a rag and linseed-oil, and afterwards the whole coating must be washed off with water. These etchings may be printed either with the roller, or, like copper-plates, with rags.

As an art, lithography has steadily worked itself into favour, partly on account of its cheapness and facility of operation, and partly owing to the numerous modes in which it may be applied. It is true that it can never equal the finer styles of engraving, but for a thousand ordinary purposes it affords a ready and not inelegant substitute. All those specimens of penmanship now so common in cards and circulars, of cheap maps and plans, of chalk-drawings, &c. are the products of the lithographic press; and so also those fancy placards, book-covers, and the like, which we find in various coloured inks and in gold and silver bronzes. The facility with which transfers from drawings, from letterpress, and from engravings, can be worked at the lithographic press, is another of the peculiar advantages of the art; thus increasing impressions without limit from one engraving. In fine, it is not too much to assert that, but for the invention of Sennefelder, the greater proportion of the appliances of caligraphy, drawing, and ornamental embellishment now so common, could never have been called into existence.

ZINCOGRAPHY.

We may here briefly allude to this art, as it is similar in principle to lithography—the surface of the plates of zinc on which it is executed being bit away, leaving the design prominent in relief. A well-executed zincograph is little inferior to a lithograph; but though the process is simple and the material cheap, there are certain disadvantages inseparably connected with such a soft and brittle metal, that are likely ever to prevent its general adoption.

PHOTOGRAPHY.

The art of photography, or the method by which pictures or impressions of objects can be produced by the action of light,* is comparatively of recent origin, and consists mainly of two separate and distinct processes—one of which is of French, and the other of English invention.

It is scarcely possible to decide to which nation the merit of priority is due, for both discoveries were made about the same time; and the announcement was almost simultaneous in France and England, that the beautiful but hitherto fleeting images of the camera-obscura could be fixed and retained in all their delicacy and truth, and had actually been presented as permanent pictures.

The French art depends in principle upon a fact scarcely known until this discovery, that the chemical action of light upon some bodies imparts to them an increased power of condensing certain vapours on their surface. Thus if light be allowed to fall upon part of a polished plate of silver which has been exposed to the fumes of iodine until it has acquired a coating of that substance, and the plate be then placed in the vapour of mercury, the mercurial vapour will be deposited upon that part of the plate where the light has fallen, and will cause a dimness or white appearance, forming a strong contrast with the remainder of the polished surface. If the picture of a camera-obscura be allowed to rest a sufficient time upon such a plate, it can be made visible upon it in a similar manner. The brightest parts of the picture will be shown by the greatest whitening effect of the mercury, as it is condensed most copiously where the action of the light has been strongest: intermediate tints will be brought out by degrees of whiteness varying according to the amount of light, while deep shadows or dark objects will be marked by the black or resplendent surface of the metal which remains untarnished.

The English sister art, though more difficult in practice, is apparently simpler in theory. It depends upon the blackening effect of light upon certain salts of silver spread upon common writing-paper. In the camera-obscura, when properly managed, the light part of the picture makes a dark impression upon the prepared paper, the degree of darkness varying in intensity with the amount of light. It thus happens that the picture, unlike the impression made by mercurial vapour upon a silver-plate, is in shade the reverse of the object before the camera, and it has been styled a *negative* impression. At first sight this appears to be a defect, but it is, in reality, a great advantage; for it gives to this branch of photography the power of multiplying its impressions indefinitely. The negative picture, preserved from the further action of light, or *fixed*, in photographic language, is placed above a sheet of paper prepared by an easier though similar process; and being exposed to the direct light of the sun, it soon gives upon the paper below a reverse copy of itself, in which the lights and shades are the same as in the object originally depicted. This has been called a positive picture, and they can be produced in any number from a single negative.

In all these pictures it will be observed that they have one great defect, inasmuch as the actual colour of

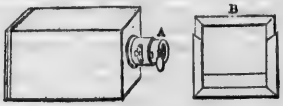
* The term Photography is derived from two Greek words—*phos*, *photos*, light, and *graphein*, to write or draw; hence also phototype. The synonymous terms Heliography, from *helios*, the sun, and *graphein*—and Photogenic Drawing, from *phôtos* and *gennaô*, I generate, are occasionally, but less frequently, used.

the object is not given—they exhibit light and shade only; and although attempts have been made, with some degree of success, to give variety of tints to a chemically-prepared surface by the solar ray divided into its primitive colours by a prism, and even by coloured pictures in the camera-obscura, we fear it is highly improbable, from the very principles of the art, that a coloured object can ever be depicted in its natural aspect. Still, the sun-pictures are very beautiful, and no less surprise and delight by their remarkable minuteness and fidelity. In the following description of the photographic arts, which, from its brevity, will admit of little notice of their history or scientific principles, we shall chiefly attempt to supply a practical guide to the artist; and although many new processes have been proposed, we shall not advert to them, as the original arts, though now somewhat modified and altered, are still unequalled in the perfection of their results.

In the first place, the photographer should know that the sun's ray—the active agent in his hands—is not a simple element, but a compound of several parts. When it is made to pass through a triangular glass instrument called a prism, it undergoes a bending or refraction from its straight course; and as its elements are not all equally refracted, they can be exhibited apart from each other by receiving the depicted beam upon any reflecting surface. The white ray of light is then divided into red, orange, yellow, green, blue, indigo, and violet rays—those colours, namely, with which we are so familiar in the rainbow. Of these, the red ray is the least refracted, and the violet the most.

In addition to the visible coloured rays, it is possible to detect at least two other elements of the original ray which have been also unequally refracted: these are heat and the power of chemical action. The heat is found to be greatest in the neighbourhood of the red, or least refrangible, and it diminishes rapidly towards the more refrangible rays; while the power of causing chemical action is greatest near the blue and violet, and diminishes as rapidly towards the red. It thus happens that a surface reflecting red or orange gives little of the chemically-acting element; while a blue or violet colour abounds in it. If the light is transmitted through a coloured medium, it obeys the same law. Red, by obstructing the blue and other rays, obstructs most also of the chemical power; while a blue medium allows it to pass freely.

The camera-obscura, which is so essential to the photographer, has been already described under OPTICS (No. 16); and it is sufficient to state at present, that for photography any kind of instrument may be used: from a common spectacle-glass, fixed in a hole in the end of a box of the simplest construction, to the more expensive apparatus made with one or more achromatic lenses by an expert optician. The valuable properties for this art are sharpness or minuteness of the image, with a large admission of light—that is, a bright, as well as a clearly-defined picture; and these can only be obtained by the use of carefully-made lenses, corrected for the imperfection of the ordinary magnifying-glass. If a common lens or spectacle-glass be employed, the light should be admitted through a very small aperture or *diaphragm* in front of it; and whoever uses such an instrument, should recollect that the chemical rays of light which produce the photographic picture are more refrangible than the principal light rays, and he should accordingly place his sensitive plate or paper a little nearer the lens than the sharpest visible image. This distance can be found by a few trials; and a tolerable picture may thus be obtained by a very inexpensive instrument. Where success is more desirable than economy, a camera should be procured which has been adapted for this art by a good optician; and they are now manufactured with glasses corrected for the defects of the common lens, as carefully as in the telescope, and provided with all the means for securing the best focus, and for introducing the prepared plate or paper so as to correspond with it. The following diagram represents the construction in common use. A is a sliding tube in front, by which the lens can be adjusted to the proper focal distance; the other end of the box is provided with grooves, so as to admit a thin wooden frame, or pane of glass at will; B is one of



those slips or frames for receiving and inserting the prepared plate or paper.

In the practical working of this instrument, when the object to be taken is immovable—as a building, or a landscape—a very small aperture should be used, whereby greater sharpness is given to the picture; but if the light is feeble, or rapidity is of consequence—as in the taking of portraits—the aperture should be as large as is consistent with moderate distinctness. Some cameras are provided with a piece of ground glass, on which the sensitive paper is laid; and it is thereby supposed that it can be more accurately placed in the focus. Excellent cameras can be obtained on the continent from Voigtländer of Vienna, Graff of Berlin, and Chevallier and Lerebours of Paris. In this country, the best cameras we have met with have been made by Mr Thomas Davidson of Edinburgh.

THE DAGUERREOTYPE.

The method of fixing the images of the camera-obscura upon metallic plates is due to M. Daguerre, a painter in Paris, from whom the art takes its name. It was discovered by him while engaged in a series of experiments, at one time carried on along with M. Niepce of Chalons, a gentleman who had even attained some success by another but very inferior process before he became acquainted with the experiment of his partner. It was divulged by Daguerre in 1839. Since that time the art has been simplified, and rendered greatly more rapid by the employment of a substance not known to Daguerre; yet the beauty of the original pictures of fixed objects made by him has not yet been surpassed. It may be divided into the following stages or operations:—Polishing the plate; giving the sensibility to light; taking the impression; rendering it visible by mercury; removing the iodine, &c.; and lastly, fixing the impression.

For these processes certain chemicals and articles of apparatus are requisite; namely—highly-polished plates of silverised copper: they are manufactured at Sheffield and Birmingham, as well as imported from France. Three or more boards of half-inch deal, 2 feet in length, and 4 or 5 inches broad, covered on one side with cotton velvet, applied above a layer of cloth or flannel: these are termed buffs, and are for polishing the plates; one is dusted with finely-powdered tripoli or rotstone, and another with calcined lampblack, placed in a muslin bag. Two deep glass troughs, a little larger than the plates to be used: they are enclosed in wooden frames, and have carefully-ground plate-glass covers: one of them is charged with a layer of powdered iodine, mixed with arrowroot, and the other with a preparation of bromine, made by either of the following methods:—1*st*, One part of a saturated solution of iodine in spirit of wine is added to six or eight parts of water, a saturated solution of bromine in water is then poured into it, until the whole becomes of the colour of Madeira wine; and a small quantity of this liquid is poured into the glass when required. 2*d*, The bottom of the glass is covered to the depth of a quarter of an inch or more with arrowroot, moistened with water, acidulated with ten or twelve drops of sulphuric acid, eight or ten drops of bromine being mixed with it when required, and renewed as often as the reddish-brown colour becomes faint by the evaporation of the bromine. A camera-obscura, provided with the necessary frames or slides for receiving the

prepared plates. A deep box, with an iron cup at the bottom, holding two or three ounces of mercury, and with a lid opening at the top of the box, and slanting to its hinges, with an inclination of 45 degrees. A solution of one part of hyposulphite of soda in ten parts of water. A solution of chloride of gold, &c. made as follows:—thirty grains of hyposulphite of soda are dissolved in twenty ounces of distilled water, to which is added, drop by drop, a solution of chloride of gold in a small quantity of pure water, the mixture being well stirred all the while.*

Having, if necessary, cut the plate to the size of the camera slide by a sharp-pointed knife, or pair of strong scissors, it is polished by briskly rubbing it upon the polishing buffs, beginning with that which has been dusted with the rotstone, then on that which is covered with lampblack, and finishing with the clean velvet.

When it is perfectly bright and resplendent, it is placed (in a nearly-darkened room) over the glass containing iodine, where, in a few minutes, it receives a coating from the iodine fumes, which should appear of a golden-yellow colour over the whole surface. Care must be taken to avoid too long exposure to the iodine, by which the yellow will speedily pass into purple, when it will be necessary to repolish the plate. In this state it may be used for taking bright and stationary objects; but an exposure of several minutes in the camera is necessary. When rapidity is required, the plate, after attaining the golden-yellow colour, is transferred from the iodine box to the other dish containing the bromine preparation, where it speedily receives a coating from the bromine vapour, and assumes a violet hue. It is now much more sensitive to light, and the amount of bromine may be so managed that a picture can be taken in a single second. Some manipulators, after giving this coating of bromine, replace the plate for an instant over the iodine, and thereby imagine they prevent spots, and produce pictures of a finer tone.

In some cases it is expedient to carry the first application of iodine as far as a reddish hue, and then to apply the bromine until a blue shade is produced. Even bromine alone may be used; and this gives the greatest sensitiveness of all. In practice, however, this extreme sensitiveness is not desirable, from the difficulty of catching the exact time to stop the action in the camera, when the whole exposure is so short. If it is an instant too long, the gradation of shades is lost, and the whole picture may become of a uniform white when subjected to the subsequent process: it is then said to be solarised. In reality, the exact quantities of the sensitive coatings, and the time for exposure in the camera, are only to be learned by practice. They vary according to the clearness of the sky, and the colour of the object to be taken: so much so, indeed, that even the most expert Daguerreotypists are often obliged to make a few experimental trials in commencing their operations for the day. In practice, the best portraits are usually taken when the sensitiveness is such that eight or ten seconds are required to make the impression; and this degree is attained with a good camera, when the plate, after being iodised to a yellow, has been brought to a violet by the bromine.

The plate, as soon as it is made sensitive, is placed in the frame or slide by which it is carried to, and exposed in the camera-obscura; and when the impression is taken, it is again removed to a dark room, where it is fixed, by an appropriate contrivance, on the inside of the lid of the mercury-box, so as to rest with its prepared side towards the mercury, and sloping at an angle of 45 degrees. The mercury being now heated by a spirit-lamp, the vapour rises, and the image is gradually unfolded; when it is sufficiently distinct (care being taken that it is not too much mercurialised, by which its whole surface would be dimmed), it is laid in a plate or shallow trough, and the hyposulphite solution is poured upon it, to dissolve off the iodine coating. This should take place very rapidly, and the solution may be poured back into the bottle through a filter for further use.

The picture is now partially fixed, and it would remain for a long time unchanged if protected by glass. It can be remarkably improved, as well as rendered more permanent, by a process discovered by M. Fizeau, by which metallic gold is precipitated upon the plate, and uniting with the molecules of mercury, augments its brightness, and consequently the strength of the picture. The process of M. Fizeau is as follows:—The plate taken from the solution of hyposulphite of soda, and very carefully washed by pouring a stream of water over its surface, is placed upon a horizontal support, and covered with as much of the gold solution as will remain upon it. The flame of a strong spirit-lamp being now applied, the improvement is seen to take place rather suddenly, just as the liquid begins to boil. If this is carried too far, a film of metal will start from some part of the surface of the picture, and the whole will come off so easily that the impression is utterly spoiled. The plate is now quickly thrown into water; water is freely poured over its surface; and it is dried by holding it with forceps, in a slanting position, over the flame of a spirit-lamp, so placed that the drying shall begin at the top, and pass rapidly downwards, the last drops of water being blown off by the mouth.

The picture will now admit of being coloured, if it be thought desirable, and it is done very simply by dusting or laying over it any metallic pigment of the required tints. When the picture is unsatisfactory, it should not be subjected to the fixing process, but be carefully repolished on the velvet buffs; and if it be much soiled or scratched, it must undergo a previous friction with tripoli powder and oil, and be strongly heated by a spirit-lamp. The same plate may thus be made to undergo many trials.

The finished picture must be protected in a glass frame.

THE TALBOTYPE.

The other branch of the photographic art, by which the pictures of the camera are retained upon common writing-paper, is the discovery of Mr Fox Talbot, and was styled by him the Calotype (Gr. *kalos*, beautiful). Depending in principle upon the blackening effect of light upon the salts of silver—a fact which had long been known to chemists—the idea of taking impressions of objects by this means was not new, although no one had met with much success in its practice. As early as 1802, Mr Wedgewood published a method of making profiles by the action of light upon paper or leather which had been coated with a solution of nitrate of silver; but his experiments were attended with little success, and he was unable to preserve his pictures from the further action of light after he had made them. Mr Talbot himself, in a process communicated to the Royal Society on the 21st February 1839, so far anticipated his own greater discovery; another step towards it was soon after made by the Rev. J. Reade, who employed the infusion of the gall-nut to increase the sensitiveness of the argentine preparation; and finally, Mr Talbot divulged and patented the Calotype in February 1841.

It is this art, now usually called the Talbotype, which we propose to describe. It has been improved in some respects with the experience of eight or nine years, and it now differs materially from the original patented process in its details, although in principle it is still the same. The substances employed in it are—nitrate of silver, iodide of potassium, commonly called hydriodate of potass, gallic acid, pure and crystallisable acetic acid, and hyposulphite of soda—all of which may be obtained in a state of sufficient purity at the shop of any respectable chemist. It is very much otherwise, however, with the paper on which the picture is to be taken; and we believe that many incipient photographers have thrown up the art in despair, because they did not happen to use good paper, and were not

* The above-described apparatus may be seen or obtained at Watson's, cabinet-maker, Earthen Mound, Edinburgh.

aware that their want of success could be owing to this cause. It is to be hoped that ere long the trials, now in the hands of more than one experimentalist, will result in the use of glass plates, or some fabric more perfect than any paper at present in use. The desirable qualities in paper are a smooth, fine, and uniform texture, with a sizing so strong, that the paper is not bibulous when put into water, and especially the absence of all chemicals, sometimes employed in its manufacture. These requisites have usually been found, in a tolerable degree, in a yellow post, bearing the watermark, '*Whatman, Turkey-mill,*' and better in old than in new specimens. Until some fabric of better qualities is produced, the photographer should examine all the varieties of paper he can find, in which he will be assisted by dipping them in water; and having selected and marked the most perfect specimens, he should subject them to a comparative trial of the whole process, to discover the best. The paper, before it is subjected to any of the preparations, should be cut into pieces a little less than the camera slide, as it expands when wet: and being marked to distinguish the side, each portion is to be coated with iodide of silver, by the following process proposed by Mr William Furlong in 1844:—25 grains of nitrate of silver are dissolved in one ounce of distilled water, to which about 3½ drachms of iodide of potassium is then added, and shaken until the copious yellow precipitate is redissolved. This solution is to be freely brushed over the marked side of the paper by a clean and dry camel-hair pencil, or with a little cotton wool. The paper is then allowed to dry spontaneously at a fire; and when dry, it is immersed in a basin of tepid (not hot) water, when it speedily assumes a yellow colour by the precipitation of the iodide of silver into its texture. It may be placed in cold water, but then the yellow colour is longer in appearing. It is now to be well washed in several changes of water, or allowed to lie in it for an hour or two, when it may be again dried on clean blotting-paper, or at a fire, or pinned up to dry spontaneously. It is called by photographers iodised paper, and it may be kept for years. The following solutions are required for the next steps of the process, which should be conducted by the light of a candle, or in a room from which daylight is nearly excluded by a red curtain:—1. A saturated solution of gallic acid in distilled water; 2. A solution of 50 grains of nitrate of silver in 1 ounce of distilled water, to which is added 2 drachms of pure crystallisable acetic acid; 3. The preceding solution diluted with eight times its bulk of distilled water.

When a picture is to be taken, the dilute solution No. 3 is freely brushed over the surface of the iodised paper by means of a camel-hair pencil, of the kind called 'swan quill,' or by a bit of cotton wool, which is more economical; and by the use of a fresh quantity for every application, is *always clean*. The superfluous solution, after about half a minute, is blotted off by one or more applications of clean white blotting-paper; and the paper, now sensitive to light, is carefully placed in the slide, to be conveyed to the camera-obscura. When the operation in the camera is concluded—which will occupy from twenty seconds to three or four minutes—the slide containing the paper is reconveyed to the darkened apartment; and a mixture being made of equal parts of solutions Nos. 1 and 2, it is very freely brushed over the face of the paper as before, and allowed to remain upon it so as to be wet, until the picture, which soon appears, is sufficiently strong, or till the whole surface begins to turn brown. It is now to be immersed in clean water, where it may remain excluded from light for many hours, until it is convenient to fix the impression.

The above process admits of some variations: for example, a few drops of the gallic-acid solution may be mixed with the dilute solution No. 3, for application to the iodised paper, and it will make the impression come out sooner. If the sensitive paper must be kept some time, as an hour or two, before it can be used, then the solution No. 3 may be made more dilute, even to three times the extent directed, with advantage. If the picture unfolds itself of a reddish hue, more gallic acid should be immediately applied; and if the whole surface darkens before the picture is sufficiently strong, it is often an indication that there is a want of acetic acid in the sensitive solution No. 3. In this case an additional quantity must be added; care being taken, however, not to use an excess, which impairs the sensitiveness of the paper. If the picture still appears of a dusky hue, the iodised paper should be exposed to the sun for ten minutes, which often improves it; and if, after all, a good picture cannot be obtained, the fault in all probability lies in the paper itself. Some artists do not use dilute solution No. 3, but make the paper sensitive by No. 2 undiluted, and bring out the picture by No. 1 alone.

The weather most suitable for the photographer is a bright day, with a clear blue sky and sunshine, if the object be to take buildings or views; for portrait-taking, however, a clear day without sunshine is preferable. Great success cannot be attained in foggy weather, or in the smoky atmosphere of a large town; and some coloured objects, particularly such as are of a reddish or tawny hue, always make a comparatively feeble impression. We were once long puzzled on finding the portrait of an individual invariably covered with blotches corresponding to white spots on the negative, until at last it was seen to depend upon a multitude of freckles, scarcely otherwise perceptible! It is for the same reason that many paintings cannot be well copied by the Talbotype; the reddish or yellow colours, which may be the brightest parts of the picture, reflect the chemical ray feebly, and are dark in the finished positive, while every tint of blue which reflects it strongly is in the same degree too bright.

The negative, after being immersed in water for an hour, to be freed from all undecomposed nitrate of silver, may be preserved from the further action of light, or fixed, by simply wetting it thoroughly with the solution of hyposulphite of soda, when it is to be again immersed for some hours in clean water; but it may be fixed, and the yellow coating of iodide of silver removed by one operation: thus—place it in a common earthenware dish of sufficient size, pour over it a few ounces of the solution of hyposulphite of soda, and then heat the dish over a fire until the yellow colour is removed, which will happen before the liquid approaches a boiling temperature. Another negative may be then whitened by the same solution. The hyposulphite of soda should now be removed, by placing the negative in water for twelve hours, or by repeated washing. When the impression is not too faint, the negative may be improved by waxing it, which is accomplished by placing it on blotting-paper over any surface sufficiently hot to cause the wax to melt when rubbed upon the picture—an excess of wax, if any, being wiped off with blotting-paper. Black spots on any part of a negative may be obliterated by touching them with a solution of 20 grains of cyanuret of potassium in 1 drachm of water, care being taken to prevent it from spreading. The same solution is useful for removing the black stains from the fingers, so characteristic of the Talbotypist.

Positive impressions are obtained from the finished negative in the following manner:—To a solution of 50 grains of nitrate of silver, in 1 ounce of distilled water, add strong liquid ammonia until the precipitate which is at first formed is re-dissolved. This liquid will form a sufficiently sensitive coating on some kinds of paper, which may be discovered by trial. It acts well on a thick post by *Nash*. Brush it freely over the paper; dry it thoroughly, either before a fire, or slowly in a room nearly dark; and place it upon a flat board, which is covered with a layer of cloth or several plies of paper. Lay the negative over it with the picture-side downwards, and cover the whole with a thick glass plate, screwed down to keep the negative closely applied. When now exposed to

daylight or sunshine, the light passes through the negative, which gives a reverse impression of itself on the paper below, the lights and shades of the picture being now in their natural state. A convenient positive apparatus may be made by fixing the plate-glass in a frame, which is hinged upon the flat board, and secured by a catch or buckle. Some specimens of paper do not blacken readily with the above preparation, and in that case the paper must be salted, by dipping it in a solution of a teaspoonful of common salt in half a gallon of water. When dry, it will be found to answer. A solution of nitrate of silver alone may be used with salted paper; and by varying the strength of the nitrate of silver from 40 or 50 grains to 80 or 100 for each ounce of water, and exposing the positive frame to diffused daylight, or to strong sunshine, a variety of tints may be obtained for the positive picture. The time necessary to make a positive impression varies with the transparency of the negative and the amount of light. In bright sunshine, a light waxed negative will be copied in two or three minutes; while, in other circumstances, a whole day may be required. It is advisable to make the positive rather too dark at first, as it may be revived to any degree of brightness by the fixing process it has afterwards to undergo. It is now immersed in water for an hour, or washed in a weak solution of salt and water, to decompose any remaining nitrate of silver, and then laid in a dish in the solution of hyposulphite of soda. If the impression is not too dark, it should be soon removed; but if otherwise, it may be allowed to remain in it for some hours, or even a day or two, until it be reduced to the proper shade. The hyposulphite must now be carefully removed, by allowing the positive to remain not less than twelve hours in water, frequently changed, and, finally, it should be immersed in hot water for half an hour, to insure the complete removal of the salt. If this is not done, the impression may become gradually weakened after many months. It may now, if desirable, be fixed on Bristol-board, by means of isinglass, gum water, or weak glue.

The positive process may be employed to copy lace, leaves of plants, manuscript, or printing on one side; etchings, engravings, or drawings, the first impression being of course a negative. A collection of valuable etchings may thus be copied without injury, and from each of the negative impressions so obtained any number of fac-similes of the original may be multiplied at a very trifling cost.

It is a singular fact in the history of photography, that the first methods—namely, these which we have now described in detail—should have been given to the world almost perfect from their origin. Discoveries so remarkable could not fail to attract many experimenters into the same field; and the chemical action of light has now been minutely investigated in its relations to numerous substances. Such inquiries have naturally produced many new processes for the delineation of the images of the camera-obscura, as well as the less delicate methods by superposition; yet none of these, as far as we know, has rivalled its progenitor either in the certainty or perfection of its results. It seems, therefore, sufficient to mention, that most of the new processes, as well as much information on the science of photography, are to be found in a series of papers by Sir John Herschel in the 'Philosophical Transactions of the Royal Society of London,' commencing in 1840, and in a work entitled 'Researches on Light,' by Mr Robert Hunt.—(Longman and Co., London.)

The amateur and professional artists employ almost exclusively the Daguerreotype and Talbotype, to the comparative qualities of which we shall now shortly allude, for the guidance of those who would attempt the practice of the art, but are uncertain to which process they should give the preference. The peculiar characteristics of the Daguerreotype picture are its extreme delicacy and minuteness, which are sometimes even too minute for the unassisted eye to appreciate. By the aid of a magnifying glass, objects have actually been seen most faithfully depicted, which, in the original view, required the use of a telescope to be observed. This extraordinary finish of detail, causing no detriment to, but rather adding to the harmony of, the general effect, imparts an inexpressible charm to these pictures; for they actually seem to be the reality itself, and not an imitation.

The portraits from the life which were first taken by this process had many faults: their hue was pale and leaden, and the length of time required for an impression was such that no features could retain their expression: the movements inseparable from a long sitting impaired also the sharpness of the form and outlines; and though still extraordinary in this respect, the picture had always a stiff and death-like aspect. Now, however, by the increased rapidity of the process, by which a sitting of a few seconds only is necessary, and that in a light which can be borne without effort or pain, the Daguerreotype portrait seems to be the most perfect approach to the living reality which can be imagined—the passing smile, the very softness of the skin of youth, are faithfully recorded.

In the Talbotype picture the effect is different, and it has a value also peculiar to itself. Its delicacy in a landscape or building is far inferior to the Daguerreotype, yet still the impression is as minute as paper can receive; and while the tone can be varied to almost any shade of reddish-brown or black, a good impression, once obtained, can be multiplied without limit, and at a cost which enables the amateur to distribute his works as widely as he may desire. For this last reason also the Talbotype is continually available, and affords a perpetual source of amusement and delight.

It has been said that a common incident, graphically narrated, excites as great an interest as a wonderful adventure; and so also do we derive pleasure from the graphic delineation which the Talbotype gives us of even a common object: a bush, a stone, or an effect of light, may exhibit as much of the beautiful and picturesque as a study of much pretension. To the painter, such subjects are invaluable—they show him how nature should be viewed; and we could name those in the highest rank in that profession who have taken lessons in this school, and have not been ashamed to avow their master.

Many portraits by the Talbotype are not good or pleasing likenesses, from imperfection in the paper employed, or from a painful look, or total want of animation, sometimes unavoidable in a process still too long. Individuals whose habitual appearance depends more on the expression than the form of their features, may also fail to obtain a good resemblance. But many people dislike these pictures from inability to appreciate their beauties. A glaring daub may be more prized by the vulgar than a valuable painting by the hand of a master; and the Talbotype of rare beauty is sometimes despised because it has not the brilliant colouring or the open eyes of a commonplace portrait in miniature. It is worthy of remark, that those who are acquainted with the works of Titian, Rubens, Rembrandt, and other great painters, are no less surprised than delighted to trace the resemblance in their works to the impressions of the Talbotype, proving in this manner the true observation of nature by the ancient masters. And when the skill of the artist in arranging the subjects is combined with dexterity in the photographic manipulation, no painter's hand can compete with these productions of nature herself in the fidelity and power of their expression. We have seen Talbotypes produced jointly by the late Mr Robert Adamson and Mr D. O. Hill of Edinburgh which warrant these remarks, and have obtained this tribute from the greatest among the painters of the present day.

Specimens of this art have been published by the inventor himself in a work entitled 'The Pencil of Nature' (Longman, Brown, and Co., London); and may be obtained from Messrs Hanneman and Malone, Regent Street, London; and from Mr Alexander Hill, Princes Street, Edinburgh.

MUSIC.

It is the object of the following pages to exhibit such a view of the principles and practice of music as may be calculated for popular information. The path to musical knowledge has for the most part been rendered rugged and toilsome by the interposition of many needless difficulties. Things really plain and simple have been invested with an air of mystery; and the great principles of the art, though in themselves easily explained, and easily understood, have been buried beneath a mass of useless technicalities. The conviction that this is the case has sometimes led to the opposite extreme; and the study of music has been apparently simplified by short-hand methods and mechanical contrivances, devised to diminish the labour of reflection and memory. But there is no 'royal road' to music any more than to mathematics. Skill in its practice is to be gained only by a clear understanding of its principles. All that the instructor can do is to divest those principles of unnecessary obscurity, and to present the rules of practice in their simplest and most comprehensive form.

The musical artist, whether as a composer, a singer, or an instrumental performer, requires a very different degree of knowledge and skill from the amateur, who cultivates the art as an elegant accomplishment and as a refined and intellectual pastime—an innocent and salutary relaxation from the severer cares and occupations of life. In this point of view, there is no station or degree of society in which music may not be cultivated with advantage. And the experience of the present day has shown, and is showing more and more, that even the classes who earn their daily bread by the sweat of their brow, may find in music a recreation within their reach, full of innocent enjoyment, and pregnant with moral and social benefits. It has been found that the highest pleasures which it can impart—pleasures derived from the knowledge of its noblest productions—are accessible to the humblest as well as the highest; and that it is to the toil-worn artificer and labourer that music dispenses its best and dearest blessings.

Those, however, whatever may be their station in society, who are to derive such benefits from music, must acquire a knowledge of it *as an art*, whose principles and rules afford exercise to the intellect, and whose lofty and beautiful productions exalt and purify the mind. Many tribes, in a very rude state of society, exhibit much sensibility to music, and derive much pleasure from the simple strains in which, taught by nature alone, they give expression to their feelings; and there is no doubt that even to their untutored minds music, such as they possess, is a source of much higher and better enjoyment than the mere gratification of sense. But it is only, we repeat, where music has become an art, and where its exercise is invested with the dignity of an intellectual pursuit, that its effects as an instrument of civilisation and moral improvement become evident and striking.

It is of course to the more wealthy and educated classes of society that the attainment of scientific knowledge and technical skill in music has been hitherto confined. At this day, even those classes in this country have little to boast of in this respect; much less, indeed, than they had two or three centuries ago. In the sixteenth and seventeenth centuries, the music chiefly cultivated in England consisted of *vocal harmony*, and the performance of the inimitable *madrigals* of the Italian and English masters of that age was regarded as a most elegant pastime, in which every one who had pretensions to the habits and manners of good society was supposed capable of participating. Every musical student, as far as his means and opportunities permit, ought to follow the example set in these times, and study both the theory and practice of harmony; for it is impossible either to acquire a respectable degree of proficiency in the practice of music, or to derive real pleasure from it as a liberal and intellectual pursuit, without that expansion of mind which is derived from a knowledge of its principles.

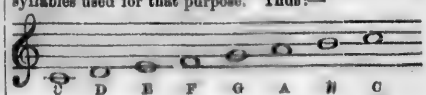
This study ought to be conjoined with the practice of singing, or performance on some instrument. Great facilities will be afforded by being able to play ever so little on the pianoforte; to do which, in so far as to realise to the ear the effect of successions of chords and combinations of harmony, is a matter of no difficult attainment. People will prosecute the study in different ways, and carry it different lengths, according to their different dispositions, opportunities, and views. But we may say in general that a familiarity with the principles which we shall attempt to develop, combined with moderate skill and readiness in singing or playing on an instrument, will produce that enlargement of view which is requisite for the full comprehension and enjoyment of the noblest productions of the art. We may add, that the study of harmony will be more pleasantly and successfully followed as a domestic and social pastime than as a solitary pursuit. Members of a family may follow it together; or a circle of friends and companions may form themselves into a little class for the purpose. Supposing them to have profited by the methods of instruction, now so easily accessible, so as to be able to sing from the notes vocal passages of the simplest kind (if with a pianoforte, so much the better), they will find little difficulty in mastering the contents of the following pages.

THE SCALE.

Music is composed of sounds produced by the human voice, or by instruments constructed for that purpose, varying in pitch according to certain fixed and determinate degrees. The gradation of these sounds, from the lowest, or most grave, to the highest, or most acute, forms what is called the *musical scale*, a scale evidently derived from nature, since, though it has been found to be more or less complete in different times and places, it is the same in its principal degrees in all parts of the world. By using the different sounds or notes of this scale in succession, in such a manner as to give pleasure to the ear, *melody* is produced; by using two or more of them at the same time, in such a manner as to be agreeable, *harmony* is formed. Melody, in its simpler forms, is immediately dictated by nature, as no people or tribe, however rude, seems ever to have been destitute of it. Harmony—though its effects, as well as those of melody, must be founded in nature—has never been found to exist unless where music has received a considerable measure of artificial culture.

The natural scale of musical sounds, though its extent is limited only by the bounds of the human voice, or of the different instruments, consists only of seven notes; for it is found that if, after singing or playing these seven notes, we continue the series, we repeat another scale similar to the first, and so on, as far as the extent of the voice or the instrument will go.

To express these sounds by means of notation, various expedients, in the progress of music, have been resorted to, which have been gradually improved, till that now in use has been adopted. It consists in drawing five parallel lines, and in placing on them, and in the spaces between them, marks representing the notes of the scale. At the same time the notes have received distinguishing names, either letters of the alphabet, or syllables used for that purpose. Thus:—



There are only seven letters, because, as already mentioned, there are only seven notes in the scale. In the above figure, the last note bears the same name as the first; and if the series of sounds is carried further, the same names will be repeated. The last of the above notes, C, being the eighth from the first, is called its *octave*; and the whole series, of which it forms the beginning and the end, is called an octave. The intermediate distances or intervals are named according to the number of notes contained in them: thus, from C to D, or G to A (counting upwards), a *second*; from C to E, a *third*; G to C, a *fourth*; D to A, a *fifth*; E to C, a *sixth*; C to B, a *seventh*; and so on between any two notes of the scale. The reason of these terms will be evident by counting, for example, from E to C, a sixth; because it contains the space occupied by E, F, G, A, B, C—six notes.

In examining the above series of sounds or octave, from C to C, it will be found that the steps of the scale are unequal; the distance between the third and fourth notes, E and F, and between the seventh and eighth, B and C, being smaller than the others. In singing the scale, this is at once felt to be the case. While, therefore, the interval between C and D, D and E, F and G, G and A, and A and B, is called a *tone*, the smaller interval between E and F, and between B and C, is called a *semitone*.

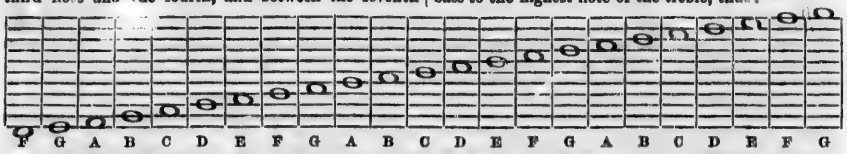
The scale, therefore, to whatever extent it may be carried, from the gravest note that can be produced, to the shrillest or most acute, consists of a series of octaves; and in each octave, the interval between the third note and the fourth, and between the seventh and eighth, is a *semitone*, while the other intervals between a note and that next it are *tones*.

It is easy to perceive that the five lines (or *staff*, as it is called) above described can comprise but a small portion of the musical scale, which is of indefinite extent, and limited only by the capacities of the human voice, or of instruments. The explanations now to be given are applicable to the voice, the original musical instrument, from which all others are derived.

The voices of women and boys are more acute, higher in pitch, than those of men. If a man or a woman sing the same tune, they will, if untaught, suppose that they are singing the same notes, or in unison, whereas the one is singing an octave above the other. It is for this reason that a note and its octave are designated by the same letter or syllable.

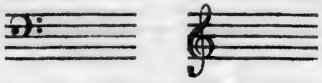
The great divisions of the voice, then, are into the *male* and the *female*. But males, as well as females, differ in the pitch of their voice; and this difference produces a subdivision. The male voice of the highest pitch is called the *tenor*; of the lowest pitch, the *bass*. The female voice of the highest pitch is called the *treble* or *soprano*; of the lowest pitch, the *contralto*.

Persons possessed of each of these varieties of voice have, generally speaking, pretty nearly the same range or compass of notes. Each voice, at an average, may be said to contain eleven or twelve notes, some more, and some less. Were we to draw a staff of *eleven* lines, placing the notes upon the lines, and in the spaces between them, we could comprehend the whole extent of the ordinary vocal scale, from the lowest note of the bass to the highest note of the treble, thus:—



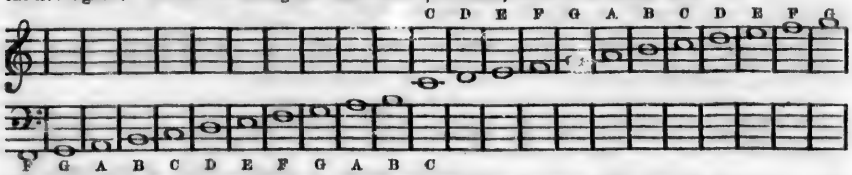
But it is evident that this would be cumbrous, and that the number of lines would produce confusion to the eye. It is found that five lines are generally sufficient for the extent of any one voice, by adding the simple expedient, when a note happens to go either above or below the five lines, of drawing an additional little line for that note, which is called a *leger* line. By this means the staff, when necessary, may be increased to six, seven, or more lines; but too many leger lines must be avoided, as they render the notation confused.

Five lines, therefore, are taken out of the above eleven to form a staff for any one voice; but each voice will require a different set of lines. The two great divisions of voice are the bass and the treble; for the bass we take the five lowest lines, for the treble the five highest. In order to distinguish these staves from each other, we employ two arbitrary marks, the one for the bass, and the other for the treble; thus—



The first is called the *bass*, or F clef, because it is placed on the line which has the note F. The other is called the *treble*, or G clef, because it turns on the line which has the note G, as seen in the above eleven lines.

Of these eleven lines, the five lowest being used for the bass staff, and the five highest for the treble staff, one line remains in the middle, which is common to both, and may be represented by a leger line above the bass staff, or below the treble staff.

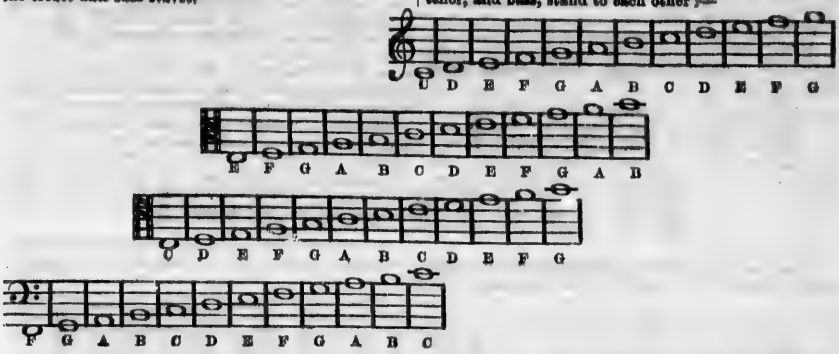


This is precisely the same as the above diagram of eleven lines, except that the middle note, C, is placed on a leger line instead of a line prolonged like the others.

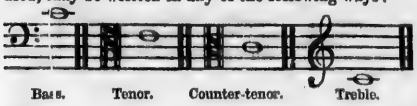
The above are the two clefs most generally used in music; and were there no other than bass and treble voices, no other clefs would be necessary. But we have seen that there are also *tenor* and *contralto* (or *counter-tenor*) voices: the range or compass of the tenor being four or five notes higher than the bass, and the compass of the counter-tenor being about an octave higher than the bass. The tenor part might be written on the bass clef, but the notes would not be spread over the five lines. The lower lines and spaces would be left empty, while the higher notes would require leger lines. The same inconvenience would arise from writing the counter-tenor part on the treble clef. Two other staves, or sets of five lines, therefore, are occasionally used for the tenor and counter-tenor parts. Both of them are distinguished by a mark called the C clef; but this mark, for the tenor, is placed on the fourth line, and, for the counter-tenor, on the third line; thus—

The C, in both these staves, is the same; and it is, moreover, the C which stands on the leger line between the treble and bass staves.

The following diagram will show the relation in which the different clefs, the treble, counter-tenor, tenor, and bass, stand to each other:—



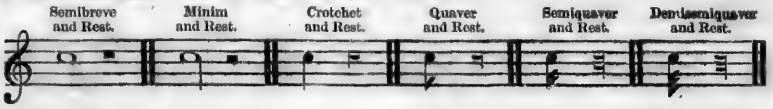
This, we apprehend, explains itself. The notes which are perpendicular to each other express the same sound. As, for example, the middle C, according to the clef used, may be written in any of the following ways:—



It is requisite to observe, however, that though the above clefs are necessary for the clear and correct notation of music for different voices, yet in music printed for popular use, the use of the *tenor* and *counter-tenor* clefs is now very generally dispensed with, the parts for these voices being written in the treble clef, an octave above the real notes intended to be sung. But the learner should not neglect the knowledge of these clefs, as they are always used in music of a high class. In the examples of harmony given throughout the following pages, the treble and bass clefs only are used, the harmony, even when in four parts, being written in two staves. But the learner will find it a useful exercise to write out these examples in as many staves as there are parts, giving to each part its proper clef.

TIME.

Thus much for the notation of sounds in relation to their pitch. But musical notes are not only high and low, they are also *long* and *short*; and their relative proportions to each other in this respect are expressed by differences in the form of the notes. The longest note in modern use is represented by a circle, as in the previous examples, and is called a *semibreve*. A note of half its length is called a *minim*; a quarter, a *crotchet*; an eighth, a *quaver*; a sixteenth, a *semiquaver*; and a thirty-second, a *demisemiquaver*. They are written as under. Certain marks, called *rests*, are also used to indicate pause or silence in the music. They are represented in the subjoined table—their form and position being expressive of their duration. The simple rule respecting them is, that a rest indicates silence for so long a time as the note beside it may be sung—a minim rest being equal in duration to a minim note, and so on.



A dot placed after a note is a mark of prolongation. A dotted semibreve is equal to three minims instead of two; a dotted minim to three crotchets; a dotted crotchet to three quavers; a dotted quaver to three semiquavers; and a dotted semiquaver to three demisemiquavers.

Measure, or *rhythm*, is one of the essential attributes of music. Everybody knows the meaning of *beating time* to a tune. By beating time, the tune or melody is divided into a number of equal parts, which in musical notation are marked by lines or bars drawn across the staff; and hence each of these divisions of the air is called a *bar*.

Each portion of the melody, comprised within the limits of a bar, is also divided into *equal* parts. Sometimes the bar is divided into *two* equal parts, and sometimes into *three*. In the former case the melody is said to be in *common time*; in the latter, in *triple time*. This division of the music is primarily intended to correspond with that measure or alternation of accented and unaccented syllables which occurs in language, particularly in poetry.

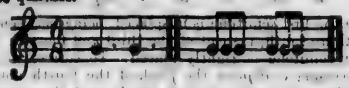
There are various kinds of *common* as well as of triple time. The first kind of common time consists of *one semibreve* (or shorter notes equal to one semibreve) in each bar. It is marked C; thus—

The second kind of common time consists of one *minim* (or shorter notes equal to one minim) in each bar. It is marked $\frac{2}{4}$; meaning, that it contains two fourth-parts of a semibreve (or two crotchets) in a bar:—

The third kind of common time is marked $\frac{6}{4}$. It consists of six crotchets in a bar: but these are divided into two equal parts, each of which is equal to a *dotted minim*, or what is called a *triplet* of three crotchets.

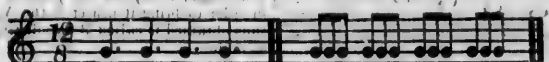
These six crotchets are divided into two triplets by *accenting* the first note of each triplet, or sounding it a little more strongly than the others. This species of time is now rarely used.

The fourth kind of common time is marked $\frac{6}{8}$. It consists of six quavers in a bar, divided into two equal parts, each of which is a dotted crotchet, or a triplet of three quavers.

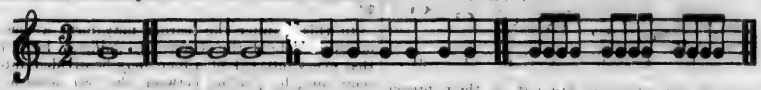


Each of these triplets may be divided into six semiquavers.

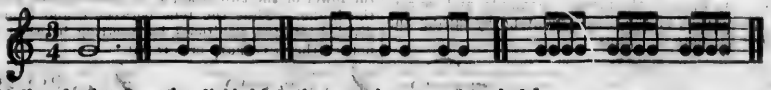
The last kind of common time is marked $\frac{12}{8}$, and consists of four dotted crotchets, each of which may be divided into a triplet of three quavers. The bar of $\frac{12}{8}$ is just two bars of $\frac{6}{8}$ thrown into one.



Triple time consists, first, of a *dotted semibreve*, divided into three equal parts, each of which is a minim, or two crotchets, or four quavers. This is now seldom used.



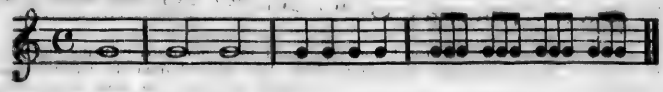
Secondly, of a *dotted minim*, divided into three equal parts, each of which is a crotchet, or two quavers, or four semiquavers, and marked $\frac{3}{4}$.



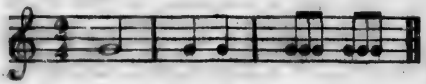
Thirdly, of a *dotted crotchet*, divided into three equal parts, and marked $\frac{3}{8}$.

Lastly, of *three dotted crotchets*, and marked $\frac{9}{8}$.

Although the dot is used for indicating the division of a note into three (instead of two) equal parts, yet it is common to divide notes into triplets without the use of the dot. Thus, in common time of a semibreve in a bar, it may be divided thus—

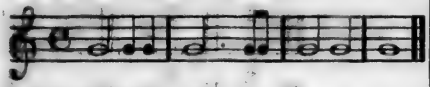


And in $\frac{2}{4}$ time—

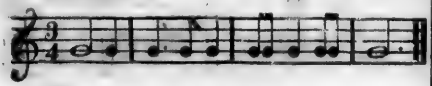


In these cases, the notation of C time is similar to $\frac{4}{4}$; and $\frac{2}{4}$ to $\frac{4}{4}$. When a note, without being dotted, is thus divided, the triplet is frequently marked with a small figure 3, but this is not always done.

An individual bar may have parts of different value in it; thus in common time may occur—



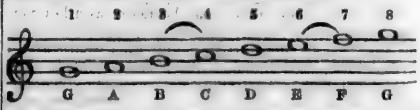
And in triple time—



DIVERSITY OF KEYS.

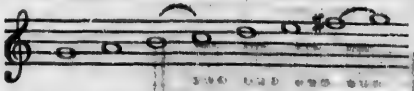
It has been already shown that the scale consists of a series (more or less extended) of *octaves;* and that in each octave the intervals between the third and fourth note, and between the seventh and eighth, are *semitones;* all the other intervals between two adjoining notes being *tones*. It is this inequality in the intervals which produces the tune or melody of the scale.

In singing this scale, we may begin upon any note at pleasure; and this note, whatever it may be, is called the *key-note*. But on whatever note we begin to sing the scale, we must, in order to preserve its tune or melody, place the *semitones* in the positions already mentioned—that is, between the third and fourth notes, and between the seventh and eighth. We have already exemplified the scale, as commencing on the note C. Take it now upon another note—suppose G.

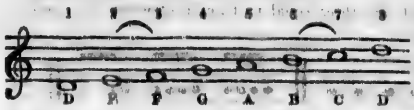


But one of the intervals in this scale is not in its proper place. The interval from E to F, which (as we have

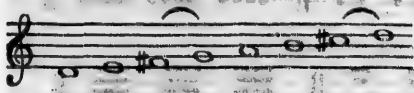
seen) is a semitone, is here between the sixth and seventh, instead of being between the seventh and eighth; while the interval between the seventh and eighth is a tone, instead of being (as it ought) a semitone. The other semitone, from B to C, is in its right position. To correct this, it is only necessary to *raise the pitch* of the note F, so as to make it a whole tone higher than E, and consequently a semitone lower than G. A new note is thus obtained, called F *sharp*, which is distinguished by a particular mark, as under—



Again, commence the scale on the note D—

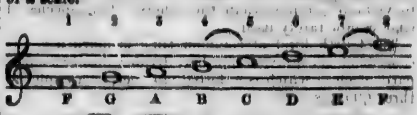


Here two of the semitones are out of their proper places, as may be seen at a glance. But we correct the position of the first semitone by raising the pitch of the note F, as in the previous example, and we correct the position of the second semitone by raising the pitch of the note C. Thus—

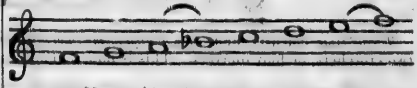


The mark prefixed to the last D is called a *natural*, by a sharp or a flat, this mark indicates that the note so altered is restored to its natural pitch.

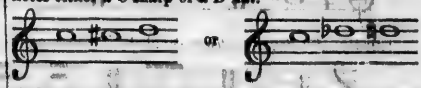
Take now the note F as the key-note or foundation of a scale.



Here the first semitone is misplaced, being between the fourth and fifth, instead of the third and fourth. The other semitone is rightly placed. To correct this, it is necessary to *depress* the pitch of the fourth note B, in order to bring it nearer to the A; and the new note thus obtained is called B flat, distinguished by a mark, as under—

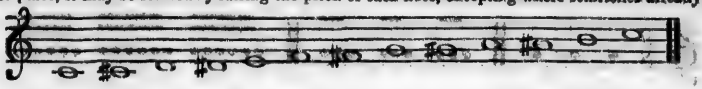


In this manner the learner may form a new scale on every note of the octave. In doing so, he will find that every interval of a tone may be divided into two semitones, by placing between the two notes a third note, at the distance of a semitone from each. And this third note may be obtained by raising the pitch of the lower of the two notes, or by lowering the pitch of the higher. Thus the tone between C and D may be divided into two semitones, by inserting between these notes either a C sharp or a D flat.

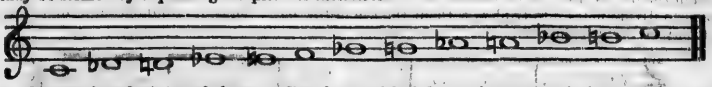


When the pitch of a note has been raised or lowered by a sharp or a flat, this mark indicates that the note so altered is restored to its natural pitch.

By thus dividing every tone into semitones, a new scale may be formed, consisting entirely of semitones. In the first place, it may be formed by raising the pitch of each note, excepting where semitones already exist—



Or it may be formed by depressing the pitch of each note—



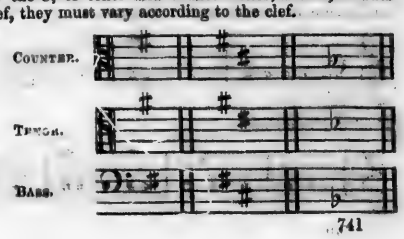
In both these scales, the intervals between E and F, and between B and C, being semitones at anyrate, undergo no alteration.

The scale which thus proceeds entirely by semitones is called the *Chromatic* scale, to distinguish it from the natural, which is called the *Diatonic* scale.

The chromatic scale, formed by *sharps*, is not precisely the same as that formed by *flats*, as the interval called a semitone is not the exact half of a tone. But the difference is so minute as to be in some measure disregarded in practice; and on keyed instruments (the organ and pianoforte) the two chromatic scales are played in the same way; the C sharp and D flat, D sharp and E flat, &c. being considered the same sounds. But though these sounds may seem the same to the ear, it is evident, from the preceding account of the formation of the scale, that they must not be confounded in musical notation.

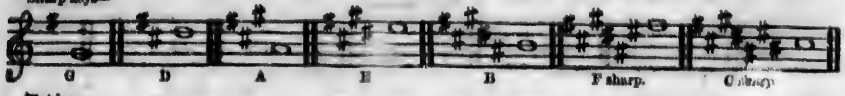
By the formation of the chromatic scale, we obtain *twelve* notes in each octave; and upon every one of these notes a scale may be formed; or, in other words, every one of these notes may be taken as a key-note. Moreover, as several of the notes appear in a double aspect, though identical in sound (as C sharp and D flat, D sharp and E flat, F sharp and G flat, G sharp and A flat, and A sharp and B flat), each of these double forms of the same note gives rise to a different scale or key, which, though consisting of the same sounds, must be differently noted. Each scale or key is distinguished by a *signature*, pointing out the notes which have been altered from the natural scale, by means of sharps or flats. The scale commencing on G, for example, contains one altered note, F sharp; and the signature placed at the beginning of a piece of music in the key of G, shows that wherever F occurs, it is sharp. The signature of the key of D shows that F and C, wherever they occur, are sharp. The signature of the key of F shows that the B is always flat; and so on.

The preceding signatures are in the G or treble clef. In the C, or tenor and counter-tenor, and F, or bass clef, they must vary according to the clef.

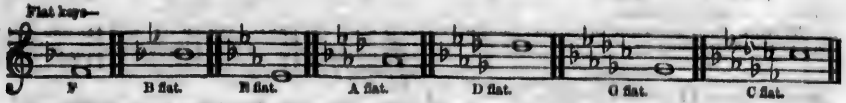


In the *sharp* keys, the series of key-notes proceeds from the natural key of C *upwards by fifths*. G, the fifth above C, has one sharp; D, the fifth above G, has two sharps; A, the fifth above D, has three sharps, &c. In the *flat* keys, the series of key-notes proceeds from C *downwards by fifths*. F, the fifth below C, has one flat; B flat, the fifth below F, has two flats; E flat, the fifth below B flat, has three flats, &c. The following are the signatures and key-notes of the different keys in common use. The key of C has no signature.

Sharp keys—



Flat keys—



From what has been said, it will appear that several of these scales, though differently noted, are played on the pianoforte with the same keys. Thus C sharp, with seven sharps at the signature, is the same as D flat, with five flats; C flat, with seven flats, is the same as B with five sharps; and F sharp, with six sharps, is the same as G flat with six flats.

The above are the principal sharp and flat keys, with the use of which it is necessary to be familiar; but there are others occasionally but rarely used. And, indeed, the series, whether of sharp or flat keys, may be carried out indefinitely.

By affixing certain syllables to the different degrees of the diatonic scale, the singing of music at sight is much facilitated. The syllables used for this purpose are—

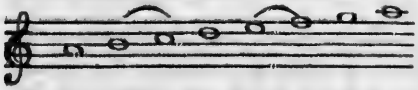
1	2	3	4	5	6	7
Do	Re	Mi	Fa	Sol	La	Si

The first, or Do, corresponding to the key-note. For example, with the signature of three sharps, Do is A; Re, B; and so on. Upon the recurrence of the key-note in its octave, Do is again used, and a second series is founded upon it. By these means a certain note of any scale is always associated with a certain syllable, and a certain interval definitely marked by the syllables at its extremities. The practising of music with syllables in this manner is called *Sol-fa-ing*.

THE MINOR SCALE.

The scale hitherto described, in which the semitones stand between the third and fourth, and between the seventh and eighth, is called the *major* scale, to distinguish it from another, called the *minor* scale.

If we commence on the *sixth* note of the scale already described, and ascend to its octave, without altering the natural notes, we have the minor scale. Taking A as the sixth note of the scale of C, we have—



The characteristics of this scale are, that the semitones are placed between the *second* and *third* notes, and between the *fifth* and *sixth*. In singing this scale, it will be felt that this position of the semitones gives the tune or melody a melancholy expression, which distinguishes it from the major scale.

It is, especially, the difference between the interval of the *third* in the two scales which is their distinguishing feature. In the major scale, as we have seen, the interval between the key-note and the third consists of two tones; in the minor scale, the interval between the key-note and third consists of a tone and semitone. The one kind of third is called a *major third*, the other a *minor third*.

The other marks which distinguish the above minor scale from a major scale—namely, the semitone between the fifth and sixth, and the whole tone between the seventh and the eighth—are not always preserved. It is one of the refinements of modern music, that in rising from the seventh to the eighth, we always do so by a semitone, whether the scale be major or minor. When this is done, the sixth note of the scale is also raised a semitone; so that the *ascending* minor scale generally stands thus:—

Differing from the major scale of A with three sharps only in the circumstance that the *third* is minor.

The minor scale thus admits of some variety. It may be written in either of the above ways, or, while the seventh is sharpened, the sixth may remain unaltered. But the scale, whether ascending or descending, is considered as consisting of the notes given in the first example. The minor scale of A, therefore, has no signature at the clef, the sixth and seventh notes being marked with sharps only when they occur, so altered, in the course of the piece.

Every minor scale, being formed on the sixth note of a major scale, is said to be *relative* to the major scale on which it is so formed.

Thus the minor scale of A is relative to the major of - - - - C

	The minor of -	E	to the major of	G
	... ... - -	B	... ...	D
Sharp keys.	... ... -	F♯	... ...	A
	... ... - -	C♯	... ...	E
	... ... -	G♯	... ...	B
	... ... - -	D♯	... ...	F♯
	... ... -	A♯	... ...	C♯

The minor of D is relative to the major of F

	... ...	G	... ...	B♭
	... ...	C	... ...	E♭
Flat keys.	... ...	F	... ...	A♭
	... ...	B♭	... ...	D♭
	... ...	E♭	... ...	G♭
	... ...	A♭	... ...	C♭

The signature of every minor key is the same as that of its relative major. Thus C major and A minor have no sharp or flat at the clef; G major and E minor have one sharp; D major and B minor have two sharps; F major and D minor have one flat; B flat major and G minor have two flats; and so on.

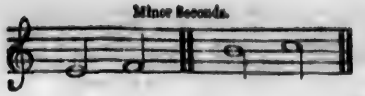
INTERVALS OF THE SCALE.

The next object of attention ought to be the *intervals* of the diatonic scale. This scale may be called the alphabet of music; as from the various successions and combinations of these sounds the beauties of melody and harmony are derived.

The intervals of the scale are expressed by numbers, and are called the second, third, fourth, fifth, sixth, seventh, and eighth, or octave. Each of them is of different kinds.

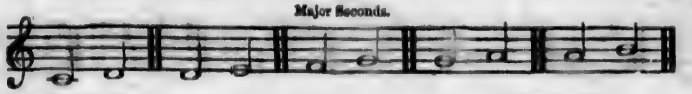
The *second* is *major* and *minor*. The *minor second*, or *semitone*, is the interval between the third and fourth notes of the scale, and between the seventh and eighth. In the key of C, these intervals are—

Minor Seconds.



The *major second*, or tone, is the interval between any other note of the scale and that immediately adjoining, as between C and D, D and E, F and G, &c.—

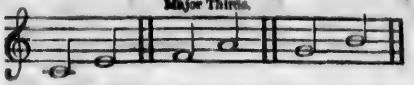
Major Seconds.



The third is *major* and *minor*.

The *major third* consists of two tones; as between C and E, F and A, G and B—

Major Thirds.



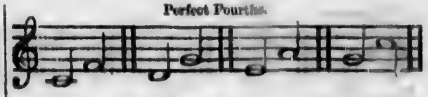
The *minor third* consists of a tone and a semitone; as between D and F, E and G, A and C, B and D—

Minor Thirds.

The *fourth* is *perfect*, and *sharp*.

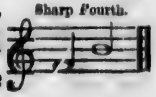
The *perfect fourth* consists of a major third and a semitone, or of a minor third and a tone; as between C and F, D and G, E and A, G and C—

Perfect Fourths.



The *sharp fourth* consists of a major third and a tone, or of three tones (whence it is sometimes called the *trito*[illegible] as between F and B.

Sharp Fourth.



Th[illegible] *perfect*, and *imperfect*

or [illegible] consists of a major and a minor third, or [illegible] a semitone; as between C and G, D a[illegible] F and C—

Perfect Fifths.

The *imperfect* or *flat fifth* is the perfect fifth diminished by a semitone; as between B and the F of the next octave, or between any of the above perfect fifths, after the lower note has been raised, or the upper note depressed by a semitone; as between C sharp and G, D sharp and A, E sharp and B, F sharp and C; or between C and G flat, D and A flat, E and B flat, or F and C flat—

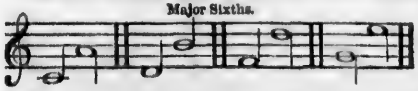
Imperfect Fifths.

The *sixth* is *major* and *minor*.

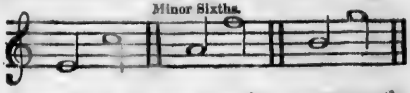
The *major sixth* consists of a perfect fifth and a tone; as between C and A, D and B, F and D, G and E—

The *minor sixth* consists of a perfect fifth and a semitone; as between E and C, A and F, B and G—

Major Sixths.



Minor Sixths.



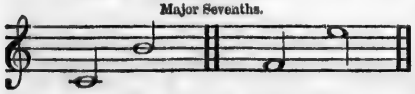
The *seventh* is *major* and *minor*. The *minor seventh* consists of a major sixth and a *semitone;* as between D and C, G and F, A and G, B and A—

Minor Sevenths.

The minor seventh may also be considered as a minor sixth and a tone, or as a fifth and a minor third, or as an octave wanting a tone.

The *major seventh* consists of a major sixth and a tone; as between C and B, F and E—

Major Sevenths.

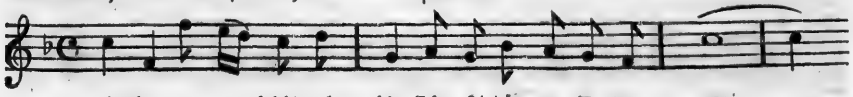


The major seventh is an octave wanting a semitone.

The octave is from a note to another of the same denomination; as from C to C, D to D, &c.

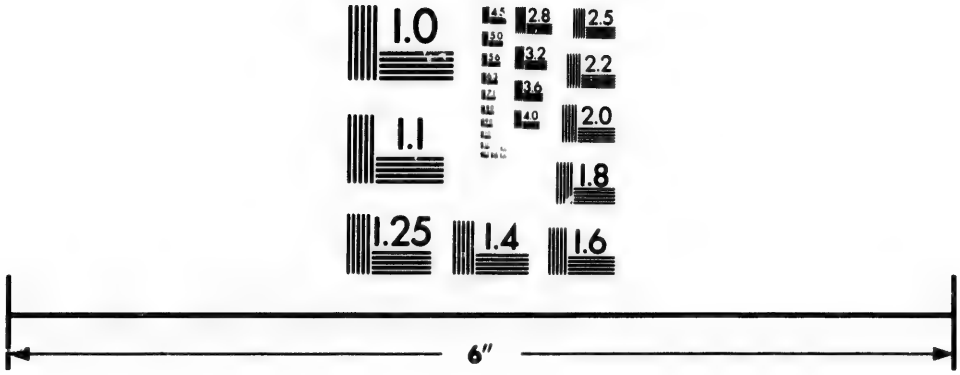
Intervals which extend beyond an octave are, the *ninth*, *tenth*, *eleventh*, *twelfth*, *&c.* though it is seldom found necessary to extend these denominations further. From the relation between a sound and its octave, it follows that similar relations exist between these larger intervals and those already enumerated. Thus the *ninth* is considered as corresponding to the *second*, the *tenth* to the *third*, the *eleventh* to the *fourth*, and the *twelfth* to the *fifth*. The above are all the intervals which are derived from the *diatonic scale*. There are several others derived from the *chromatic scale;* but to these it is not necessary to advert at present.

The agreeable succession of these intervals constitutes MELODY; and as there may be tunes (melodies) composed of the notes of one scale, or portions of several, arranged in all varieties of interval, and with all diversities of rhythm, it is manifest that with these few simple elements—as its alphabet—may be constructed the inexhaustible language of Music. The following example will illustrate the production of melody by the mere alteration of the regular order of the notes of the scale :—



Angels ev - er bright and fair, Take, O! take me to your care

IMAGE EVALUATION
TEST TARGET (MT-3)



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2.8
3.2
3.6
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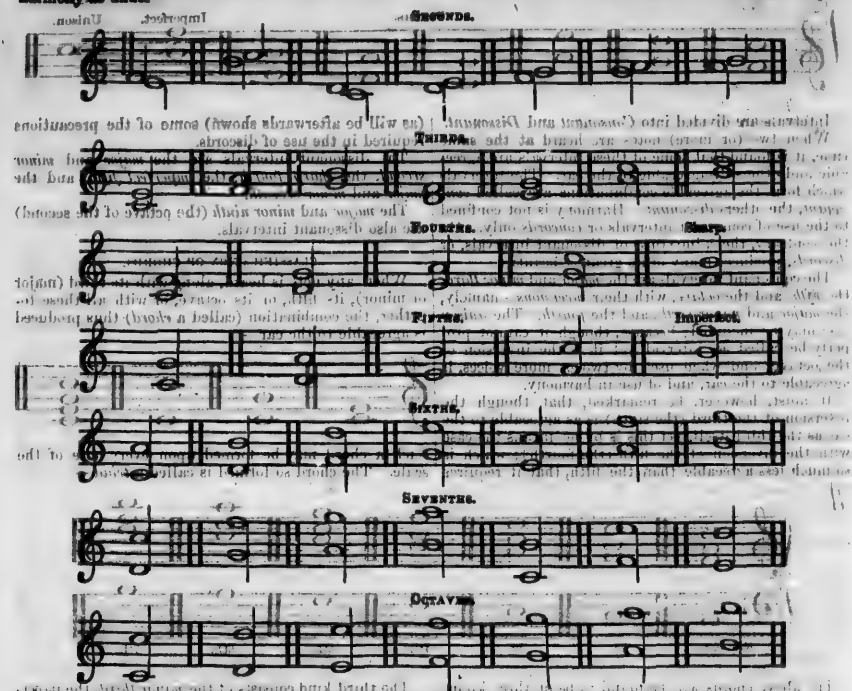
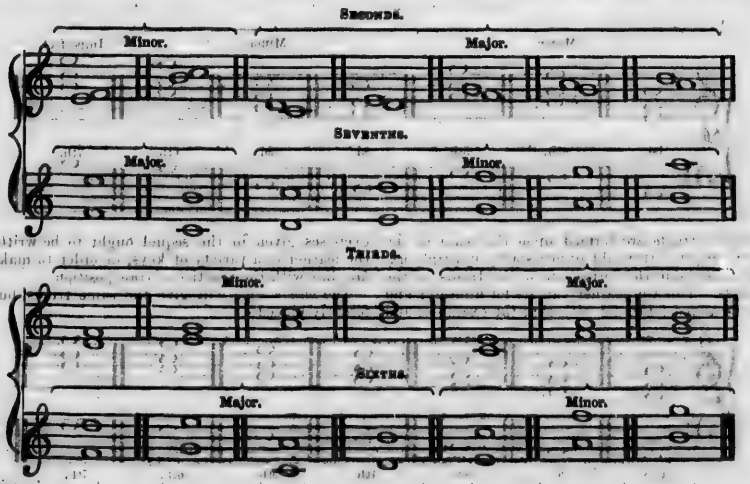
But with all the presence of melody, it is to Music in its form of HARMONY that we must turn for that richness and variety of which it is capable. We are therefore to consider intervals as being not only between two notes sounded successively, but between two notes sounded together. In the one case, they are intervals of melody; in the other, they are intervals of harmony. Intervals of melody are written as above, intervals of harmony as under—

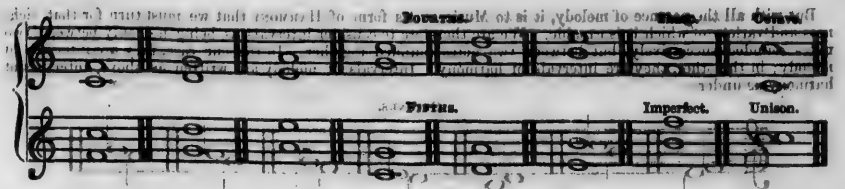


Intervals may be inverted; that is, the lower note, by being raised an octave, may be placed uppermost; or the upper note, by being lowered an octave, may be placed undermost.

By inversion, a second is changed to a seventh, and a seventh to a second; a third is changed to a sixth, and a sixth to a third; a fourth to a fifth, and a fifth to a fourth.

Major intervals are changed to minor, and minor intervals are changed to major. A minor second becomes a major seventh, and a major second becomes a minor seventh. A major third becomes a minor sixth, and a minor third becomes a major sixth; and so on, as in the following examples:—





Intervals are divided into *Consonant* and *Dissonant*. When two (or more) notes are heard at the same time, it is found that some of these intervals are agreeable and others disagreeable to the ear. The intervals which form the agreeable combinations are called *consonant*, the others *dissonant*. Harmony is not confined to the use of consonant intervals or *concords* only. On the contrary, the admixture of dissonant intervals, or *discords*, produces many of its greatest beauties.

The consonant intervals are the *major* and *minor third*, the *fifth*, and the *octave*, with their *inversions*—namely, the *major* and *minor sixth*, and the *fourth*. The *unison* also may be included; because, though it cannot properly be called an interval, yet it is the inversion of the octave; and when used by two or more voices, is agreeable to the ear, and of use in harmony.

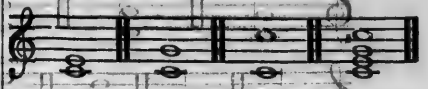
It must, however, be remarked, that though the inversion of the third (the sixth) is as agreeable to the ear as the third itself, yet this is by no means the case with the inversion of the fifth (the fourth); which is so much less agreeable than the fifth, that it requires (as will be afterwards shown) some of the precautions required in the use of discords.

The dissonant intervals are the *major* and *minor second*, the *sharp fourth*, the *imperfect fifth*, and the *major* and *minor seventh*.

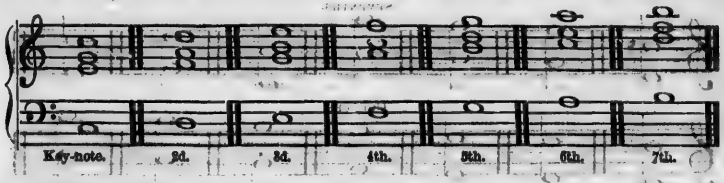
The *major* and *minor ninth* (the octave of the second) are also dissonant intervals.

CLASSIFICATION OF CHORDS.

When any note is heard, along with its third (major or minor), its fifth, or its octave, or with all these together, the combination (called a *chord*) thus produced is agreeable to the ear—



Such a chord may be formed upon every note of the scale. The chord so formed is called a *triad*—

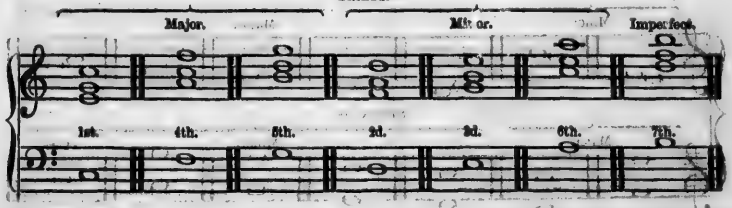


The above chords will be found to be of three kinds. The first kind consists of the fundamental note, with its *major third*, *fifth*, and *octave*, and is formed upon the *key-note*, the *fourth*, and *fifth* of the scale. It is called the *major triad*.

The second kind consists of the *minor third*, *fifth*, and *octave*, and is formed upon the *second*, *third*, and *sixth* notes of the scale. It is called the *minor triad*.

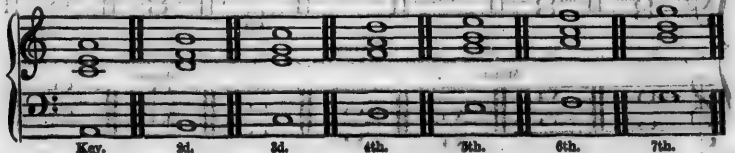
The third kind consists of the *minor third*, the *imperfect fifth*, and *octave*, and is formed on the *seventh* note of the scale. As this chord contains a dissonant interval (the *imperfect fifth*), it is much more sparingly used, and with greater precaution, than the others. It is called the *imperfect triad*.

TRIADS.

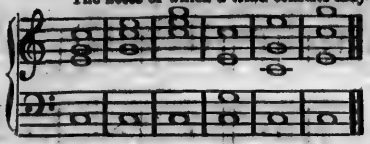


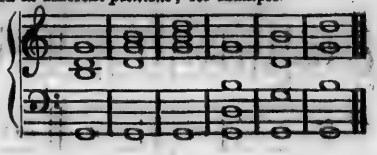
The above triads are formed upon the scale in the key of C major. It would unnecessarily multiply examples to exhibit the formation of the triads in the other keys. This the learner can do for himself; and it may be added (once for all), that the examples and exercises given in the sequel ought to be written by the learner in a variety of keys, in order to make him familiar with the practice of transposition.

The *minor scale* will give the same triads, but differently placed—



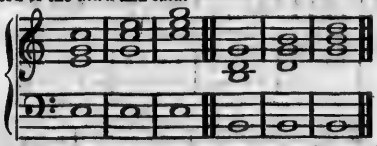
The notes of which a triad consists may be taken in different *positions*; for example—



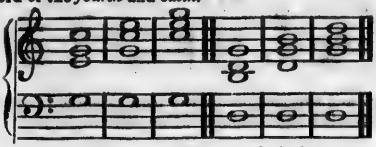


In changing the *position* of a triad, the fundamental note remains in the lowest place, or in the *bass*. But the triad may also undergo different *inversions*, by placing the third or the fifth in the lowest place, or bass.

The *third* may be placed in the bass, producing the chord of the *third* and *sixth* *—



The fifth may be placed in the bass, producing the chord of the *fourth* and *sixth*.

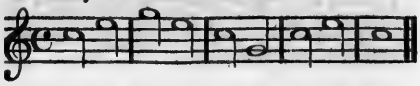


And every other triad may be similarly inverted.

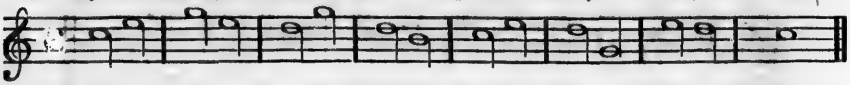
PROGRESSION OF CHORDS.

Although every note of the scale may thus be made the foundation of a triad (or *common chord*, as it is also called), yet, in forming a harmonious series of triads, they cannot be made to follow each other at pleasure; but their succession must depend on certain rules deduced from the position of their fundamental note in the scale to which it belongs.

In every scale, the most essential note is the *key-note*, or *tonic*. This note, or one of the notes contained in its triad, begins and ends every strain of melody or harmony, and recurs so frequently, that its impression is never lost upon the ear. Melodies frequently consist entirely of the notes of this triad—

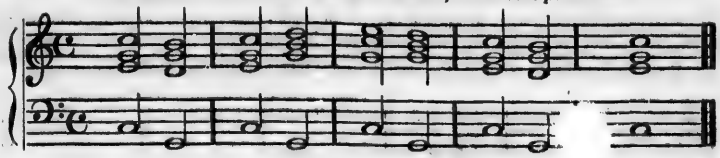


Next to the key-note, or tonic, the most essential note is the *fifth* of the scale, called, from its importance, the *dominant* or ruling note. By adding this note, and the notes of its triad, to those of the tonic, a larger field of melody and harmony is thrown open.

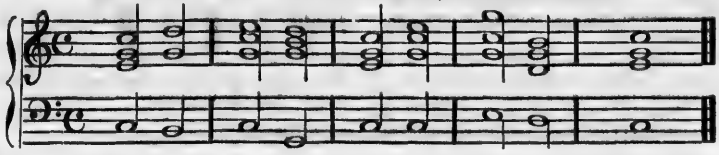


The triads, therefore, of the *tonic* and of the *dominant* are of the most frequent occurrence, and most easily alternate with each other.

Alternations between the *tonic* and *dominant*, in different *positions*—



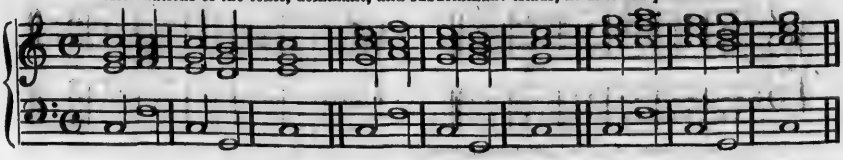
Alternations between the *tonic* and *dominant*, in different *inversions*—



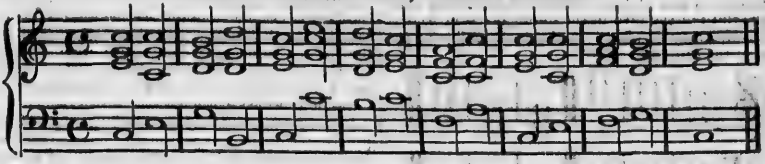
After the tonic and dominant comes the *fourth* of the scale, called the *subdominant*, with its triad—

* The different positions and inversions of chords used formerly to be marked by what are called *thorough bass figures*; but as these are now only to be met with in old music books, their use has been avoided in the present treatise. The modern manner of notation is altogether a better system.

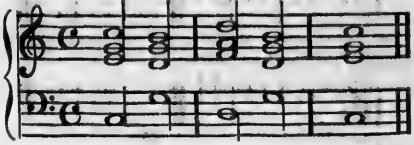
Alternations of the tonic, dominant, and subdominant triads, in different *positions*—



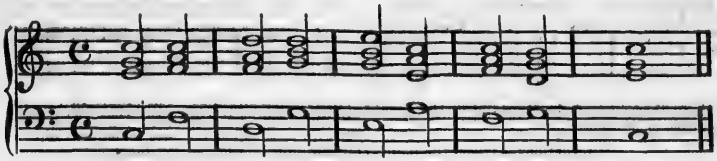
Alternations of these three triads, in different *inversions*—



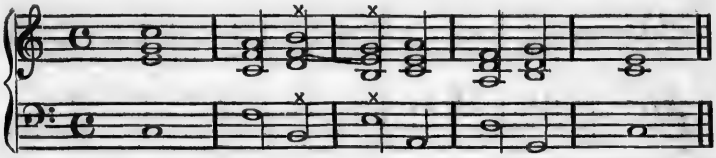
The triad on the second note of the scale (called the *supertonic*) is the next, in frequency of use, to the preceding three. Its employment may be understood from the following example:—



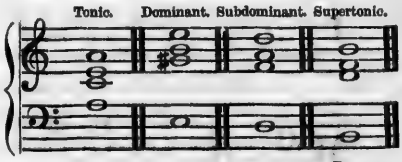
The above four triads—the tonic, dominant, subdominant, and supertonic—are the most essential. But the triads upon the *third* and the *sixth* notes of the scale (E and A in the scale of C) are also in frequent use, blended with the others; as thus—



The only remaining tri d is that on the *seventh* note of the scale, or the *imperfect* triad. One of its intervals (the imperfect fifth) being dissonant, it is much less frequently used than any of the other triads. In order to diminish its harshness, the dissonant note must fall, in the following chord, to the note immediately below it. Thus F, the dissonant note in the triad of B, must fall to E. This is called *resolving* the discord—

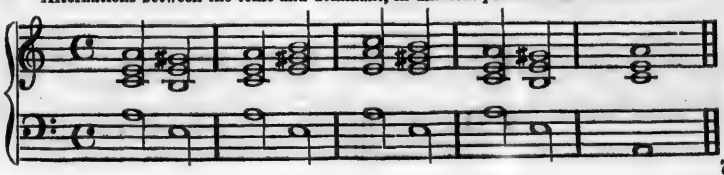


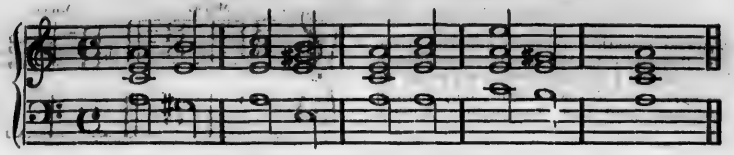
In the *minor* scale, the principal triads are placed on the same notes, and in the same order, as in the major; that is, on the *tonic*, *dominant*, *subdominant*, and *supertonic*. In the key of A minor, the *relative* to C major, these triads are—



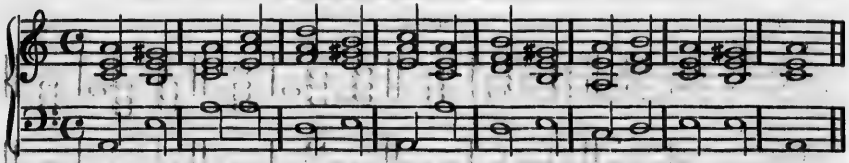
Here, it will be observed, the *tonic* and *subdominant* are *minor* triads. The *dominant* is a *major* triad, and *supertonic* an *imperfect* triad. The following examples will show how they are employed:—

Alternations between the tonic and dominant, in different *positions* and *inversions*—

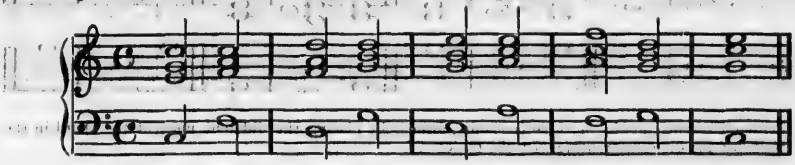




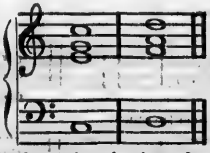
Alternations between the four triads—



In forming progressions of chords, several considerations must be attended to. A chord must be regarded as a harmonious combination of notes sounded at the same time by several voices or instruments; and a series of chords must be regarded as a succession of notes sounded by several performers, and forming several different parts or melodies, heard at the same time. Care, therefore, should be taken that the notes of each part follow each other smoothly, as in the examples already given. It will be observed, in general, that the bass moves by larger intervals than the upper parts of the chord. The following is an example of the smoothest form in which a progression of triads can be arranged:—

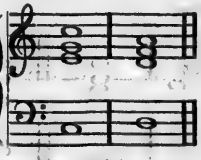


It is not permitted to make any two parts ascend or descend together by *consecutive fifths*, or *consecutive octaves*.



Take, for instance, the progression from the tonic to the supertonic—

Suppose these notes sung by four voices, in the order in which they stand. While the bass sings C, D, the second voice will sing G, A, each note being a fifth (or octave of the fifth, which is the same thing) higher than the notes in the bass; and the highest voice will sing C, D, each note being an octave above the bass. But both of these are prohibited, and may be avoided thus—



Here, while the bass rises from C to D, the second voice falls from G to F, and the highest voice falls from C to A. The progression of the triads is the same, with a different motion of the parts. This motion, when one part rises while the other descends, is called *contrary motion*. When both parts rise or fall, the motion is called *similar*; when one part rises or falls while the other part is stationary (that is, repeats or continues the same note), the motion is said to be *oblique*.

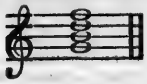
It is not easy to explain why two fifths, heard consecutively in similar motion, should produce a bad effect, seeing that the fifth is, next to the octave, the most perfect consonance. But the fact is sufficiently ascertained by experience. The prohibition of two octaves in succession is of a different kind. They are not offensive in themselves, and are prohibited only when they would produce a poor and meagre harmony; for a note and its octave being considered as the same, if two parts move in octaves, one of them is, in respect to fulness of harmony, thrown away. There is, consequently, no harm in making two parts move in octaves when the harmony is otherwise as full as is requisite. A whole strain of music may be performed in octaves (as when a man and a woman sing together apparently the same notes); but this is not regarded as harmony at all, in the technical sense of the term.

CHORDS OF THE SEVENTH.

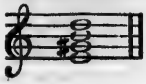
Besides the chords called *triads*, or *common chords*, there is another class of chords, called *chords of the seventh*. From these two classes, every chord used in harmony is derived.

The principal *chord of the seventh* is formed on the dominant, or fifth note of the scale. It is formed by adding a minor seventh to the major triad on that note—

Dominant of C major.



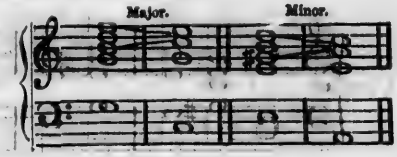
Dominant of A minor.



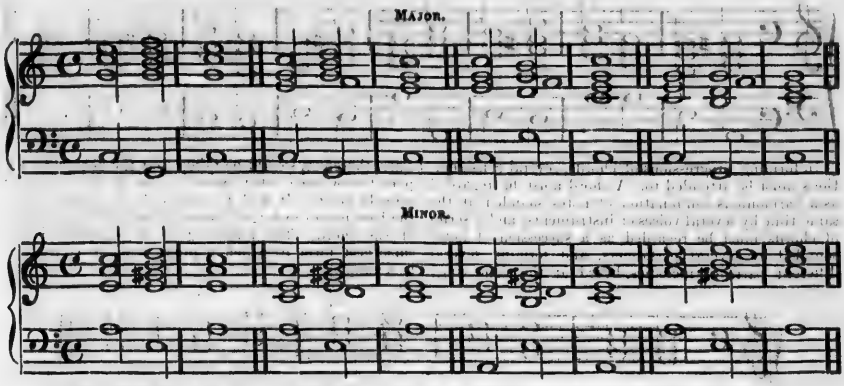
This chord may be taken in four *positions*—

Major. Minor.

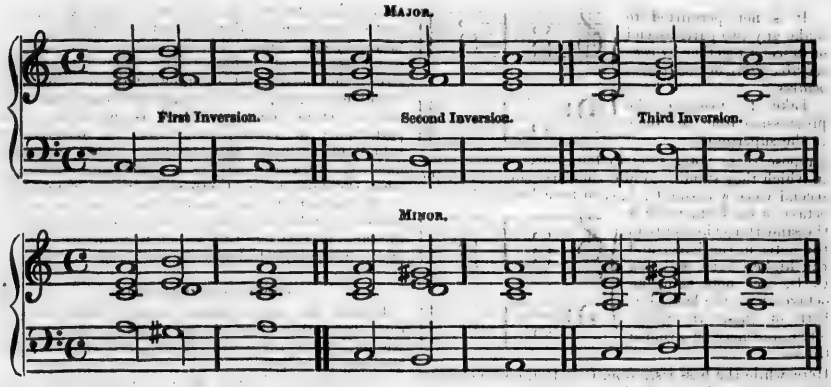
The dominant seventh is generally followed by the tonic. The dissonant note (the seventh) is *resolved*, in the major, by falling a semitone, and in the minor by falling a tone into the *third* of the tonic, and the third of the dominant chord rises one semitone into the tonic—



Alternations between the dominant seventh, in its four *positions*, and the tonic—



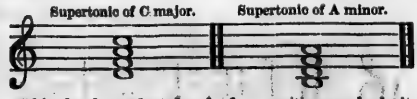
The dominant seventh admits of three *inversions*, formed by placing the different notes of the chord in the bass. They are as follow, alternating with the tonic:—



The first inversion of the chord of the seventh is called the chord of the *sixth* and *fifth*; the second inversion is called the chord of the sixth, fourth, and third (or, for shortness, *six-four-three*); the third inversion is called the chord of the sixth, fourth, and second (or, *six-four-two*). These names will be evident from looking at the chords.

In passing from the chord of the dominant to the chord of the tonic, the third in the dominant chord, which is the major seventh, or *leading-note*, of the scale, must ascend by a semitone into the key-note. Thus in the key of C, the note B, in the chord of the dominant, must always be followed in the same part by C, the key-note, in whatever manner the chords may be inverted. Further, the third in the dominant chord ought not to be *doubled*, or sounded in more than one part; because, as this note must be followed by the key-note, if this were done in more parts than one, we should have consecutive octaves, which ought to be avoided. In the preceding examples, the learner will perceive that the B of the dominant chord is always followed by C, and that it is never *doubled*. In like manner, the *seventh* in the dominant chord, as it must be followed by the third in the chord of the tonic, must not be doubled; because, if it were, consecutive octaves would likewise be produced.

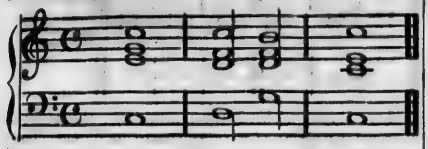
Another chord of the seventh, next in importance to the dominant, is formed upon the second note of the scale, or supertonic.



This chord may be taken in four *positions*, and admits of three inversions, analogous to those of the dominant. The learner will write it in these different forms.

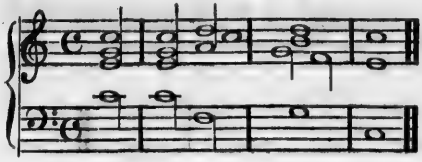
In the chord of the seventh on the *dominant*, the seventh, which is the discord, must be *resolved*, as already

mentioned. In the chord of the seventh on the *supertonic* (and in every other chord of the seventh), the seventh must be not only resolved, but prepared; that is, this note must be heard, as a consonance in the preceding chord—

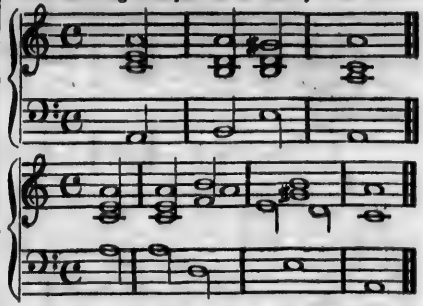


Here the C, which is the seventh of the supertonic, is *prepared* by being heard as the octave in the preceding chord, and *resolved* by falling to B in the following chord. The F, which is the seventh of the dominant, is also, in this case, both prepared and resolved. But the seventh of the dominant is not *necessarily* prepared, as may be seen by the examples already given, where it is resolved, though not prepared.

In the following example the seventh of the supertonic is prepared, while the seventh of the dominant is not prepared:—



The following examples are in the key of A minor—



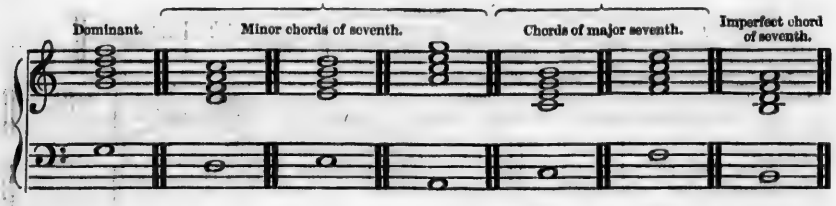
These two chords (the dominant and supertonic) are the principal chords of the seventh; but chords of the seventh (like triads) can be formed on every note of the scale. They are of four kinds—namely,

The *chord of the dominant seventh*, on the fifth note of the key; consisting of a *major* third, a fifth, and a minor seventh.

The *minor chord of the seventh*, on the supertonic, the third and the sixth notes of the key; consisting of a *minor* third, a fifth, and a minor seventh.

The *chord of the major seventh*, on the tonic and subdominant; consisting of a major third, a fifth, and a *major* seventh.

The *imperfect chord of the seventh*, on the seventh note of the scale; consisting of a minor third, an *imperfect* fifth, and a minor seventh.



Of these chords of the seventh, the *dominant* (as already mentioned) is the most frequently used. Next in frequency are the minor chords of the seventh—namely, the chords on the supertonic, the third, and the sixth. More rarely used are the chords of the major seventh, on the tonic and the fourth; and, most seldom of all, the imperfect chord of the seventh, on the seventh.

In *every* chord of the seventh, the dissonant note must be *resolved* by descending one degree. In every chord of the seventh (*excepting the dominant*), the dissonant note must also be prepared, by being heard as a consonance in the previous chord.

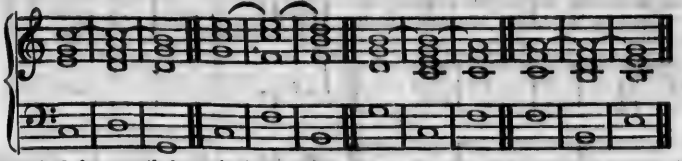
In order that these conditions may be complied with, the fundamental note of every chord of the seventh must descend by a fifth (or rise by a fourth) to the fundamental note of the following chord.

Thus the chord of the *dominant must* be followed by the chord of the *tonic*; of which progression examples have already been given. It is not necessary, however (as has also been already shown), that the fundamental note of the chord shall stand in the lowest position. By *inversion*, any of its notes may be placed undermost; but whatever be the inversion, the fundamental progression is considered the same.

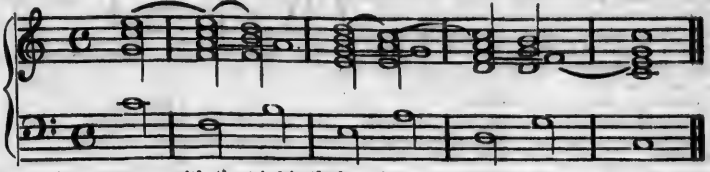
In regard to the other chords of the seventh, the fundamental progression *to* the chord must be such, that the note which forms the *seventh* in the second chord shall be a third, fifth, or octave, in the first. In other words, the dissonant note in the second chord must be previously heard as a consonant note in the preceding chord. This is designated *preparing* the dissonance.

The following are *preparations* of various chords of the seventh:—

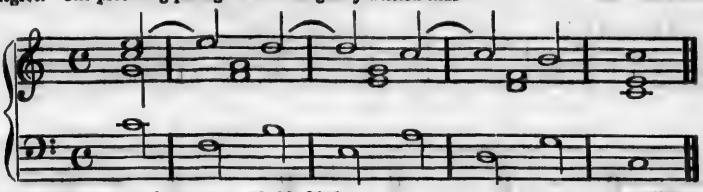
Every chord of the seventh must be *resolved*, by its fundamental note falling a fifth, or rising a fourth, as shown in the case of the dominant. The above chords of the seventh are resolved, as well as prepared; thus—



When a chord of the seventh is resolved, the following chord may be either a triad, or another chord of the seventh. In this manner a series of chords may be formed called a *sequence of sevenths*, consisting of one chord of the seventh followed by another, and prolonged at the pleasure of the composer. It is generally terminated by arriving at the chord of the dominant, followed by the triad of the tonic or key-note. Thus—



The above series commences with the triad in the key of C, and ends with the same triad, preceded by the chord of the dominant. The intermediate chords are all chords of the seventh, in which the dissonant note (the seventh) is first *prepared* by being heard as a consonance in the preceding chord, and is then *resolved* by falling a single degree. The preceding passage is more elegantly written thus—



It must be observed that, in passages of this kind, the chords are not usually inverted, as their effect depends on the fundamental notes being distinctly heard in the bass.

CHORDS DERIVED FROM THE DOMINANT.

That most important note, the *dominant*, may not only be made (as has been already shown) to carry a triad, or a chord of the seventh, but also several secondary chords derived from the above.

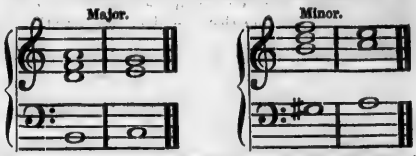
By adding the *ninth* to the chord of the seventh, on the dominant, we have the chord of the *ninth* and *seventh*.

This chord must be followed by the triad of the tonic; and as it contains two dissonant notes, both of them must be resolved by descending into the notes of the following chord:—

In the relative minor key, this chord of the ninth and seventh will be resolved thus—

This chord of the ninth and seventh is frequently used *without* its lowest or fundamental note. It then assumes the appearance of a chord of the seventh, on the seventh note of the scale. But in this case, it is treated as if the fundamental note were understood, and will be resolved into the chord of the tonic—

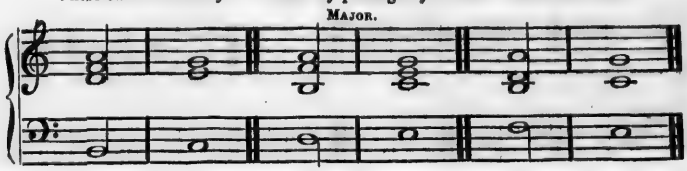
Major. Minor.



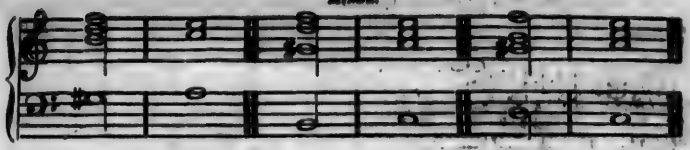
The above chord, when minor, is called the chord of *the diminished seventh*, as it has the appearance of a chord of the dominant, in which the interval of the seventh has been diminished by raising the lowest note a semitone.

These two chords may be *inverted* by placing any of their notes in the bass—

MAJOR.

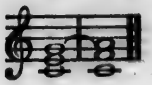


Minor.

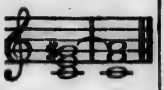


In addition to the chords which have been already explained, others are formed by raising or lowering, by a semitone, one of the notes of the chord. These alterations are mere licenses, justified, in particular cases, by elegance of effect, without altering the nature or treatment of the chord.

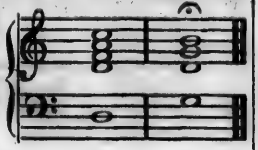
The triad, or common chord, for example, may be altered by sharpening the fifth, so that it may ascend by a semitone, instead of a whole tone, to the subsequent note. Instead of—



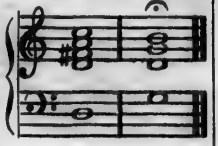
we may have



The most important of these altered chords is that which is called *the extreme sharp sixth*. It is derived from the chord of the dominant. Suppose we have the following phrase, in the key of C:—



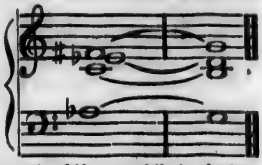
The close or stop on the last chord, which is the dominant triad, may be made more decided by changing the preceding chord, which is the minor chord of the seventh on the second note of the scale of C, into the chord of the dominant seventh on the fifth note of the scale of G, and resolving it into the triad of G, considered as a new tonic—



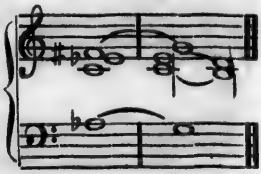
Take this chord in its *second* inversion, and then *flatten* the lowest note, so that it may fall by a *semitone* to the note following; and we have—

But as this chord, containing a *sharp fourth*, as well as an extreme sharp sixth, is too harsh, the sharp fourth is left out, and it is taken thus—

Or, instead of the sharp fourth, the perfect fifth is inserted—



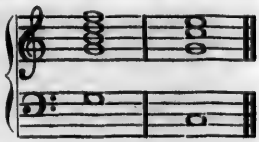
There are here *consecutive fifths*; as, while in the bass A flat descends to G, in the second part E flat descends to D. In this case the consecutive fifths have no bad effect, and are admitted by the best composers; though others, more scrupulous, avoid them thus—



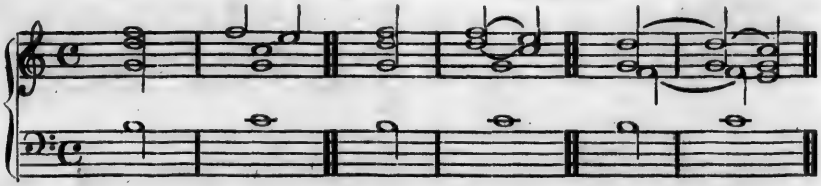
SUSPENSIONS, &c.

The chords already described are all the *real* or *essential* chords used in harmony. But great varieties of harmony may be produced by blending the notes of one chord with those of another. If, after passing from one chord to another, one or more notes of the first chord are prolonged, so as to be heard at the same time with the notes of the second chord, this is called a *suspension*.

Take, for instance, the common progression from the dominant to the tonic—



The notes peculiar to the dominant may be prolonged into the tonic, thus—

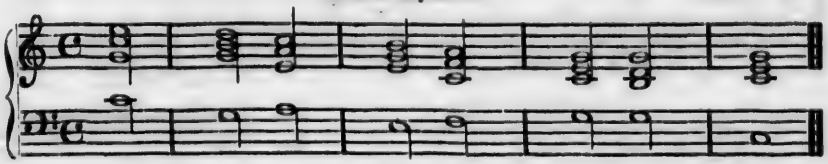


The notes, thus prolonged or suspended, become *dissonances* when they are heard in the second chord; but they are rendered agreeable by being *prepared* and *resolved*. This is perfectly plain, from inspecting the preceding example.

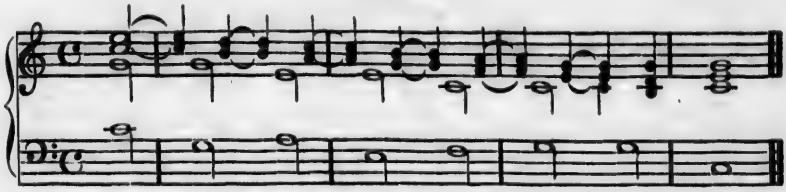
Suspensions may be formed upon any of the progressions from one chord to another which have been already explained. To give examples of these in all their variety, within our limits, is impossible; but the

following specimen will give the learner an idea of the manner in which they are used. Let him compare the following progression of chords, without suspensions, with the same progression in which suspensions are introduced :—

Without suspensions—

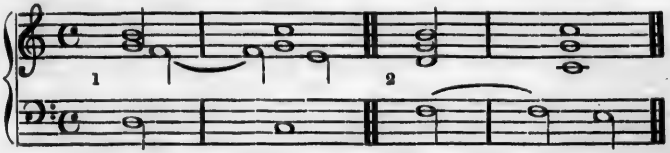


With suspensions—

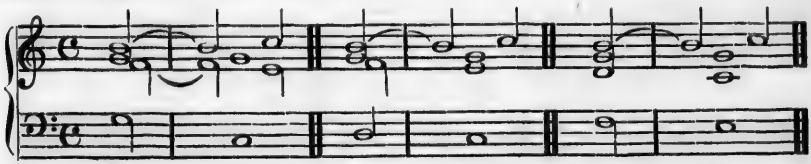


Such passages are usually written more elegantly, thus—

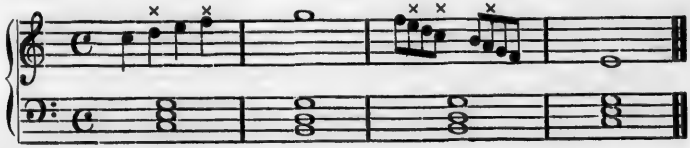
The suspension may be placed in any part of the chord, either upper or under, the suspended note being always prepared and resolved. For example, in the tenor, or the bass, see the following :—



Suspensions are sometimes, but rarely, resolved by *ascending*. This generally happens when the seventh, or leading note of the scale, rises to the key-note—

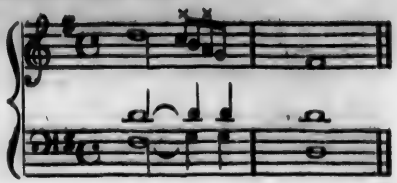


Passing notes are notes introduced to give a melodious smoothness to the passage from one chord to another, and which, though not belonging to the chord, are yet harmonious to the ear. For example—

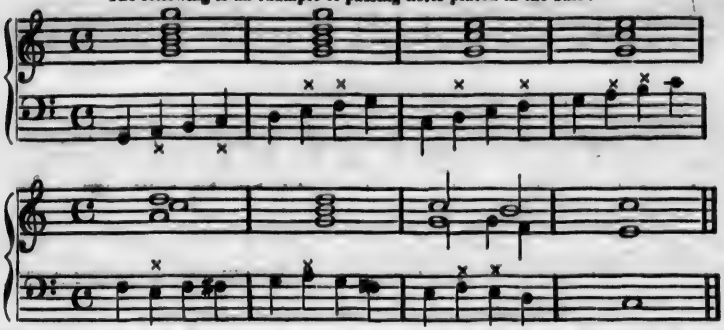


Here the notes marked with a cross do not belong to the chords, but serve as connecting links to those which do belong to them.

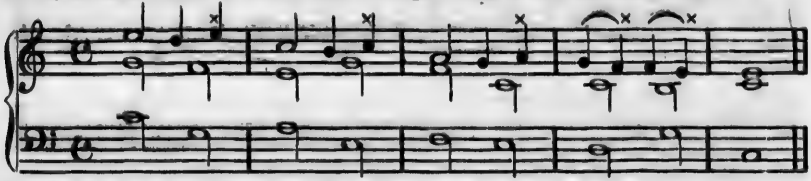
The passing notes are generally unaccented notes, though sometimes they are *accented*; as—



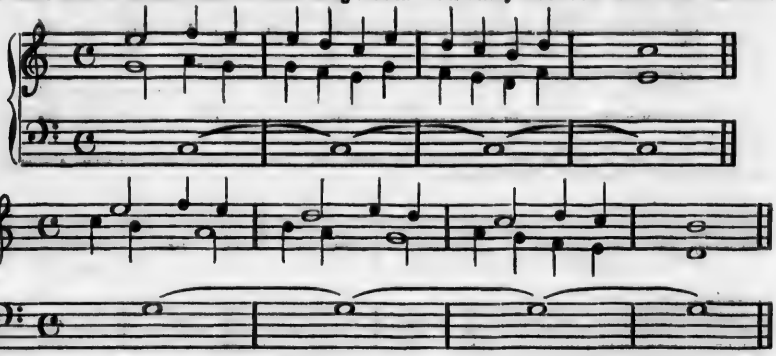
The following is an example of passing notes placed in the bass:—



Anticipation is another mode of introducing notes not belonging to the chords. It is done by anticipating a note—by sounding it before the chord to which it belongs is struck, as in the following passage:—



Lastly, harmony by notes not belonging to the chords may be produced by *pedal notes*. A pedal note (so called from its being generally played on the organ by the *pedals*) is a note in the bass, held on for several bars, while a series of different chords is heard along with it. It is chiefly used in the tonic or the dominant—

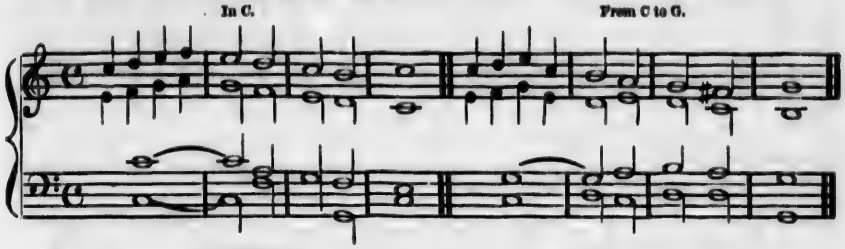


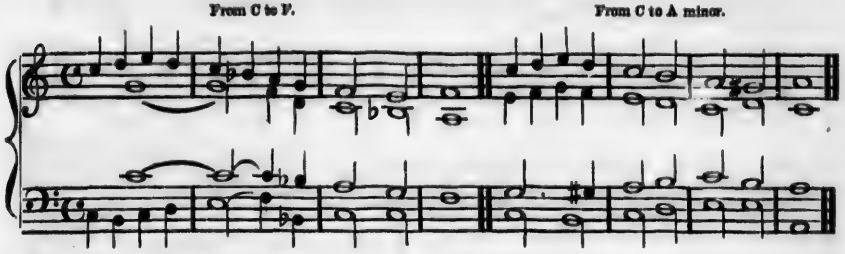
MODULATION.

Modulation is the art of passing from one key to another. A short tune, or melody, generally remains in one key; but in more extended works, it is necessary, for the sake of variety, to diverge into different keys, according to the character and style of the composition. The field of modulation is of almost boundless extent and inexhaustible fertility in musical resources; but their use requires much skill and judgment, and is regulated by certain laws and principles indispensable for the preservation of unity and consistency.

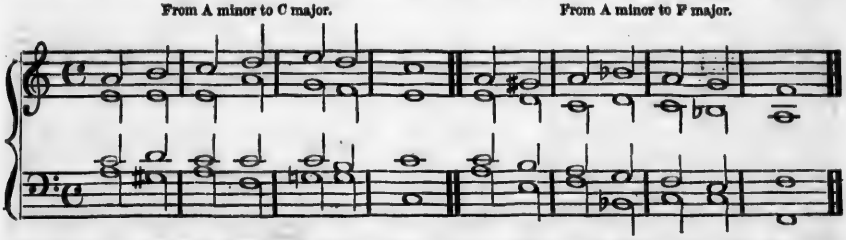
The following simple phrases, all commencing in the key of C, show how a melody may pass into other keys:—

The foregoing examples may show how a melody may pass from one key to another. By harmonising them, we see how the chords of one key pass to those of another. It will be observed that the chord of the new key is always preceded by the chord of its *dominant*—





The above are the keys into which we can pass most easily from the key of C major. If the original key is A minor, the keys into which we can pass most easily are, C major, E minor, G major, D minor, and F major—



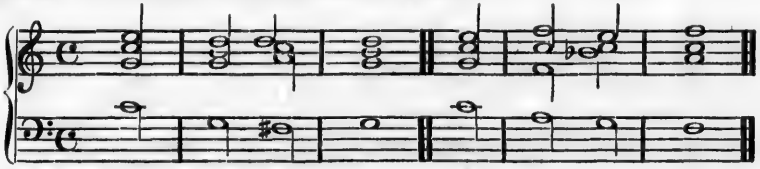
The learner may exercise himself in making transitions from A minor to the other keys above mentioned.

In modulating from the key of C to the key of any other note of the scale, the new key will be major or minor, according as the third in the scale of the new fundamental note is major or minor. Thus the keys of F and of G (as well as C) are major; while the keys of D, E, and A are minor. We do not mention the key of B, as this key, in modulating from the key of C,

is very rarely used. This note, besides having a minor third, has an *imperfect* fifth, F natural; and to make it the fundamental note of a key, whether major or minor, its fifths must be made *perfect*, by changing F to F sharp—which is not in the scale.

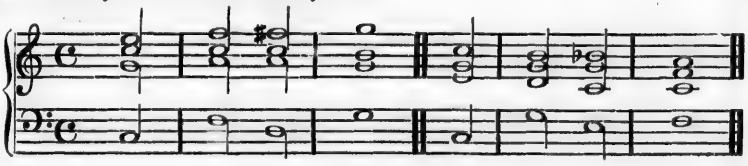
In the above examples of transitions from C major, or A minor, to other keys, these notes must be understood as standing for *any* major or minor key, from which transitions may be made in the same manner. Thus taking G as the original major key, transitions may be made to D and C major, and to A, B, and E minor; and taking E as the original minor key, transitions may be made to G major, B minor, D major, A minor, and C major. The learner should exercise himself in writing similar modulations in all the different keys.

The smoothest and most gradual modulation is effected by means of a chord which is common to both keys; that is, which belongs both to the original key and to the new key—



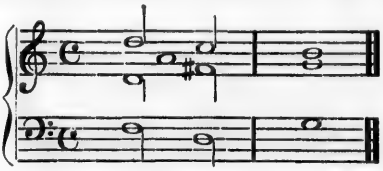
In the first of these examples, the first triad of G belongs both to the original key of C and to the new key of G. In the second example, the triad of F (of which A is the bass) belongs both to the original key of C and to the new key of F.

Modulation is less gradual (though it may be perfectly admissible), although the chord which immediately precedes the new key is not common to both keys—

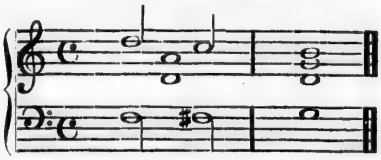


In the first example, the triad of F belongs to the original key of C, but not to the new key of G. In the second example, the triad of G belongs to the original key of C, but not to the new key of F. This kind of modulation generally produces a *chromatic* melody, or a melody containing an *accidental* semitone in one of the parts; as from F to F sharp, or from B to B flat, as above.

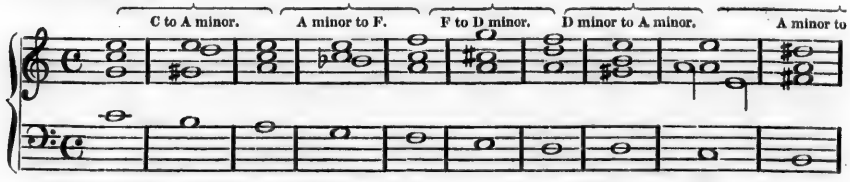
When a chord is succeeded by another, in such a manner that one of the notes of the first chord appears in the second chord, altered by a sharp or a flat, the note must be followed by its alteration *in the same part*, so as to make a chromatic melody, as in the preceding examples. When the note of the first chord appears in one part, and the altered note of the second chord appears in another part, this produces a fault, called a *false relation;* as, for example—

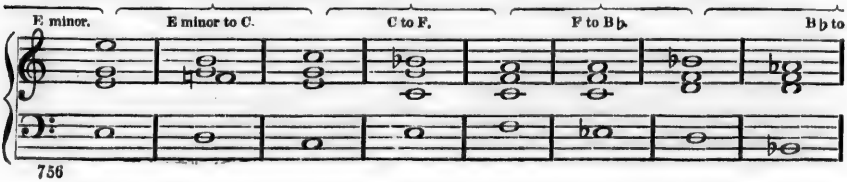


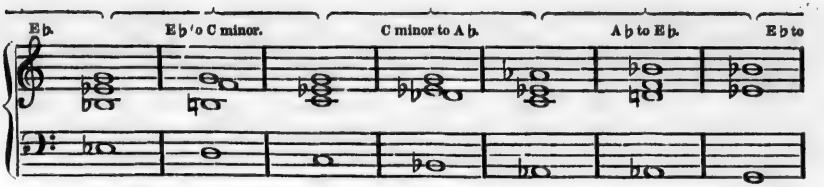
To be avoided thus—

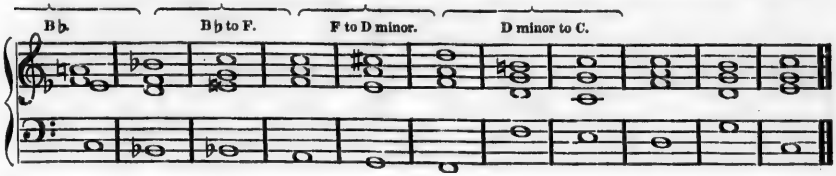


The following example is a chain of modulations, in which every key is *relative* to that which precedes it. All the modulations are effected by an intermediate chord, which is the dominant seventh, generally employed in one of its inversions—

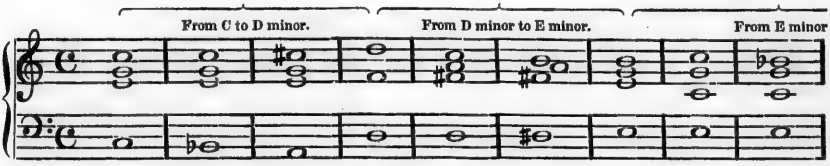


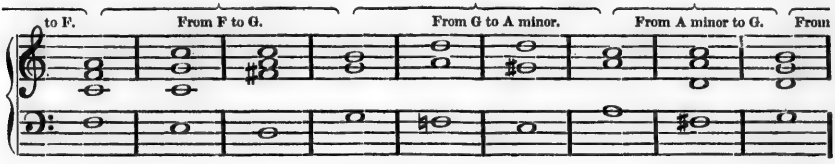


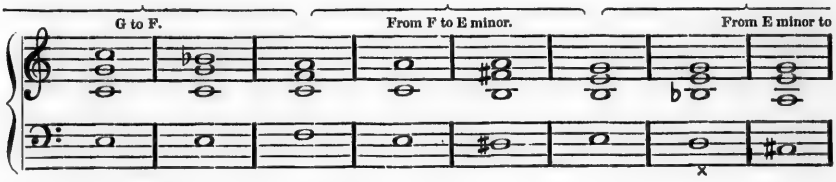


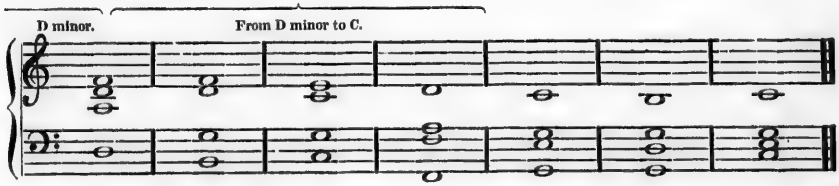


We may modulate into a key which is not relative to that which precedes it (or its antecedent), provided that both keys are relative to the primitive key, or the principal key which predominates in the piece of music. Thus, when the principal key is C, we may modulate from D minor to E minor; because, though these keys are not relative to each other, they are relative to the key of C. Supposing the primitive key to be any note, we may modulate immediately from its second to its third, from its third to its fourth, from its fourth to its fifth, from its fifth to its sixth, and from its second to its fifth, and *vice versâ*; these modulations will be generally effected by means of two intermediate chords, as in these examples—









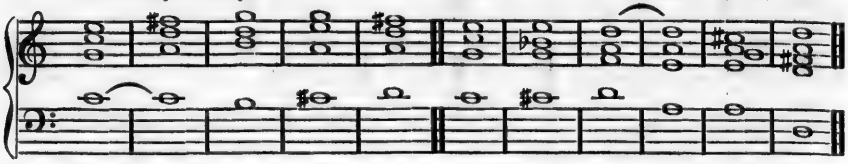
Observe that the D in the bass, marked with a cross, does not belong to the harmony of the chord, but must be regarded as a passing note, leading from the bass-note of the preceding to that of the following chord.

In modulating in this way from a key to another which is not relative to it (as from F to G, or from E to F), we must take care that the *primitive* key, to which both the keys are relative (though not relative to each other), be well determined; for it is only when this precaution is taken that such modulations can be properly employed. We can easily modulate from G major to F major, by means of two intermediate chords, in a piece of music of which the principal key is C major, while we could not do so if the principal key were D or

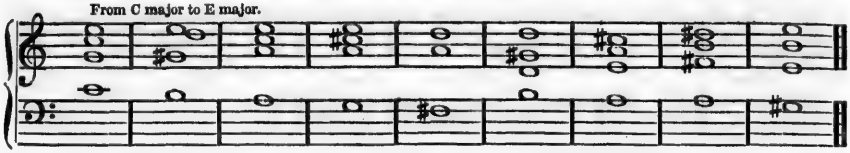
E minor. What is good in the one case might be bad in another; and all the above-mentioned modulations—from the second note of the scale to the third, from the third to the fourth, &c.—can only be used under the above condition.

When the primitive key is minor, in like manner we may modulate from the fourth note of the scale to the fifth, from the fifth to the sixth, from the sixth to the seventh, from the fourth to the seventh, and *vice versâ*. The learner may exercise himself in finding examples of this rule, similar to those given above. In the above modulations into the keys of different notes of the scale, the keys are major or minor according as their thirds, as they stand in the scale, are major or minor, as already shown; as we modulate from C to D minor, E minor, &c. We may also, though more seldom, modulate from C to D major, E major, &c.; but this must be done by a longer chain of intermediate chords, so as to prepare the ear gradually for the transition. For example—

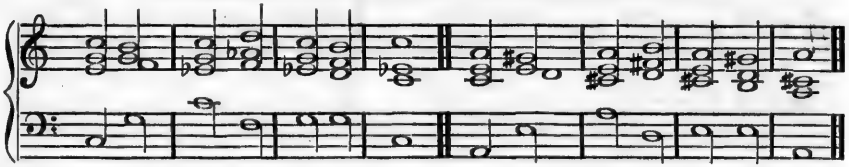
From C major to D major. Or



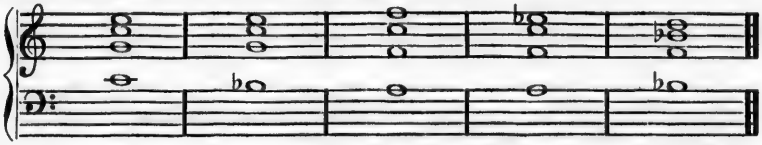
From C major to E major.



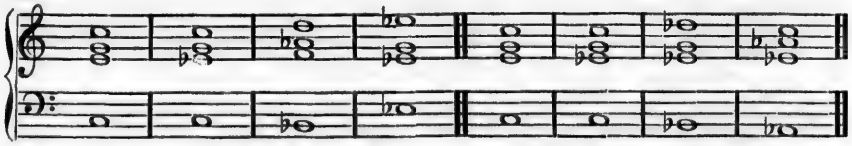
We may pass from a major to a minor key on the same note, and *vice versâ*—



We may likewise modulate from a given key to notes which are not in the scale of that key; as, for example, from C to E flat, B flat, A flat, &c. These modulations ought to be gradually effected, by passing into some intermediate key, which is relative to the keys which precede and follow it. Thus, in order to modulate from C to B flat, we may pass first from C to F, and then from F to B flat—



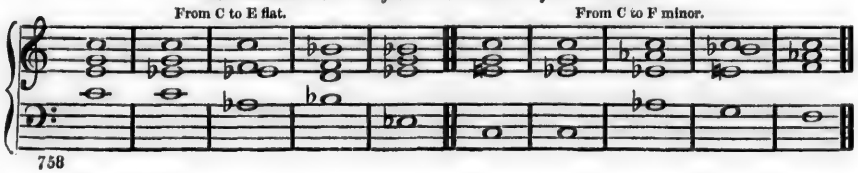
In order to modulate from C to E flat major, we may pass first from C major to C minor, and then from C minor to E flat; and to modulate from C to A flat major, we may pass from C major to C minor, and thence to A flat—

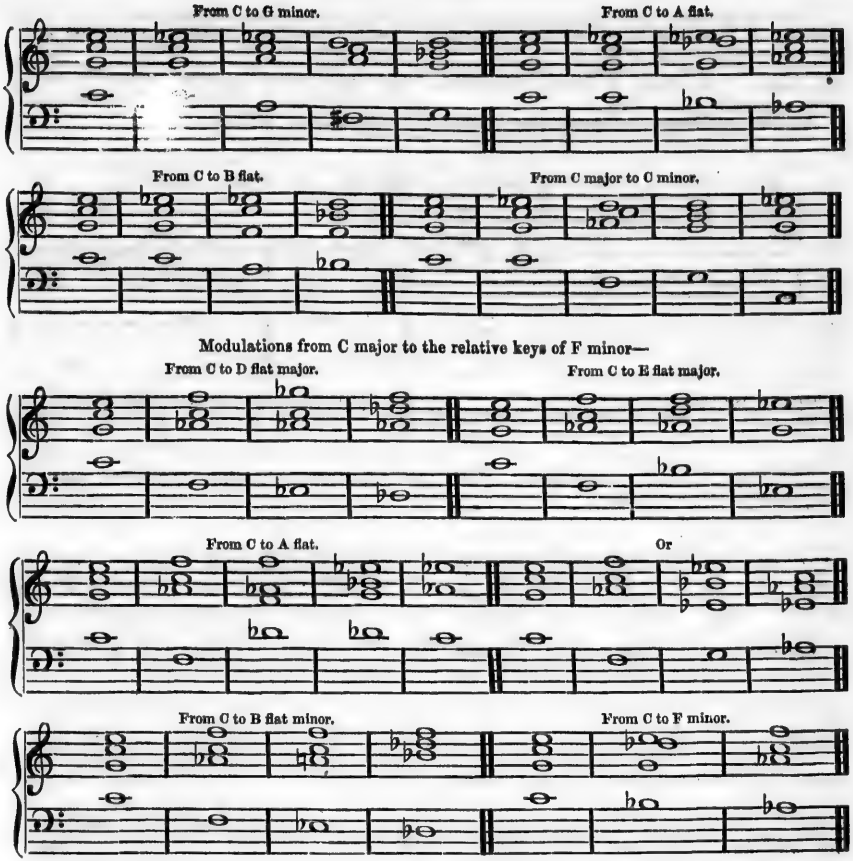


It may be laid down as a general rule, that as we may pass from a major key to a minor key on the same note (as from C major to C minor), or from a major key to the minor key of its subdominant (as from C major to F minor), we may pass from a major key to all the keys which are relative to these two other keys. Thus from C major we may pass to all the relative keys of C minor, or to all the relative keys of F minor.

Modulations from C major to the relative keys of C minor—

From C to E flat. From C to F minor.

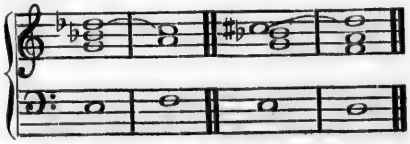




The above rules and examples embrace the principal varieties of gradual or regular modulation. But composers, in order to produce uncommon or striking effects, make *abrupt* or *irregular* transitions, by passing from one key to another not related to it (as, from C to B flat, or E flat, or D major, &c.), without the intervention of any intermediate chord. In such cases, the abruptness of the transition is frequently softened by making a pause before striking the chord of the new key; or the same effect is sometimes produced by sustaining a single note, without any harmony, for a little time, and striking a new chord containing this note in its harmony. But the use of the sudden and abrupt transitions cannot be reduced to any rule: it must be gathered from the works of the great masters. They must be cautiously and sparingly used; as departure from rule can be justified only by the effect produced.

There is one kind of sudden modulation which, from its importance, requires especial notice. This is *Enharmonic Transition.*

The diatonic scale (as has been already explained) consists of five tones and two semitones. By dividing all the tones into semitones, we have a scale of semitones, called the *chromatic* scale. In thus dividing the tone, the intermediate sound may be regarded either as the lower extremity of the tone raised, or as its upper extremity depressed; as, the intermediate note between C and D may be either C sharp or D flat. Thus two chromatic scales are formed—a scale by sharps, and a scale by flats. The tone is not divided into two exact halves, but the difference is so minute, as to be disregarded in practice; C sharp is treated as being the same sound as D flat, and on keyed instruments is produced by striking the same key. But though the intermediate sound between C and D is regarded as the same, whether it is expressed by the name of C sharp or of D flat, yet these names cannot be indiscriminately used in notation. Take, for instance, the chord E, G, B flat, D flat; and then take the chord E, G, B flat, and C sharp. These chords are struck on the same keys of the pianoforte, yet are essentially different in their character and treatment. The chord E, G, B flat, D flat, is a chord of the diminished seventh, which requires to be resolved into the triad of F; the chord E, G, B flat, C sharp, is an *inversion* of a *different* chord of the diminished seventh (C sharp, E, G, B flat), in which the C sharp is removed from the bottom to the top of the chord; and it must be resolved into the triad of D—



Here, then, we have the means of effecting an unexpected modulation. If, while in the key of F, we have

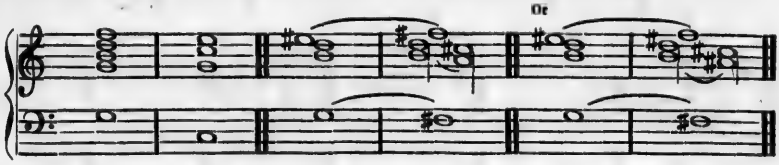
the above chord with D flat, we may, by changing that note into C sharp (the sound remaining the same), come at once into the key of D.

Enharmonic transitions may be made by means of three chords—the *dominant seventh*, the *extreme sharp sixth*, or the *diminished seventh*.

The chord of the dominant seventh may be changed into the chord of the extreme sharp sixth; and, *vice versâ*, the chord of the extreme sharp sixth may be changed into the chord of the dominant seventh.

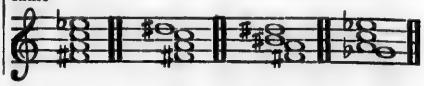
If we are in the key of C, for example, by changing the F, the dominant seventh, into E sharp, the extreme sharp sixth, we may come at once into the distant key of F sharp, either minor or major.

Or

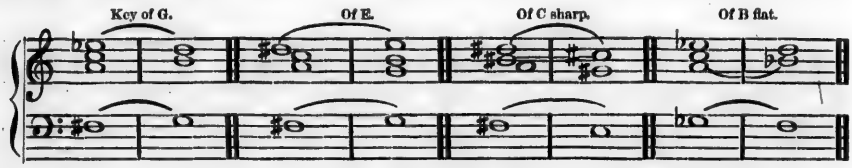


And of course we can reverse this progression, by changing the chord of the extreme sharp sixth into the chord of the dominant.

The chord of the diminished seventh is that whereby enharmonic transitions are most frequently made. Any chord of the diminished seventh may be written in four different ways, its sounds always remaining the same—



In the first of these, the leading note is F sharp, leading to G; in the second, the leading note is D sharp, leading to E; in the third, the leading note is B sharp, leading to C sharp; and in the fourth, the leading note is A, leading to B flat. Thus—



And as each of these triads of G, E, C sharp, and B flat, may be either major or minor, we have here eight different keys into which we may pass from one chord.

The great facility with which many unexpected transitions may be made in this manner, is a temptation which young composers are seldom able to resist. They crowd their music with crude and disagreeable modulations, imagining that they are displaying learning and skill, while they are doing what is in reality very easy. The remarks on this subject by the celebrated Piccini, one of the greatest masters of the Italian school, ought to be kept in remembrance by every student of music —'To modulate,' says this illustrious musician, 'is to take a route which the ear will follow willingly. It even asks to be led; but only on condition that, when arrived at the point to which you have conducted it, it may there find something to repay it for its journey, and may enjoy some repose. If you keep it constantly going on without granting what it demands, it becomes weary, and will follow you no longer. To modulate is not difficult in itself; there is a routine for that as well as all other occupations. The proof of this is found in those *enharmonic modulations* which appear to the ignorant the height of science, and are, after all, the mere sport of learners. To create melody from a given modulation, to quit it only by legitimate means, to return to it without harshness or insipidity, to make the change of modulation a just means of expression, and of judicious variety—these are the real difficulties. But to quit a key almost as soon as we have entered it, to become extravagant without reason or end, to proceed by jumps and skips, merely because we do not know how to remain where we are—to modulate, in short, for the sake of modulating, is to prove that the artist is ignorant of the end of his art, as well as of its principles; and that he affects a superabundance of imagination and learning, in order to conceal the want of both the one and the other.'

The musical instructor can explain the means by which the different kinds of modulation can be effected; but in the use of these means, the musician must be guided by the dictates of ear, taste, and feeling. It may be said, in general, that the principal key, in which the piece begins and ends, ought to occupy the largest portion of it; and that, in modulating into other keys, those which are most nearly related to the principal key may be dwelt upon at greater length than those which are more distantly related to it. But the varieties in the course of modulation are infinite; and the succession of keys, in any composition, must be the result of judgment matured by experience.

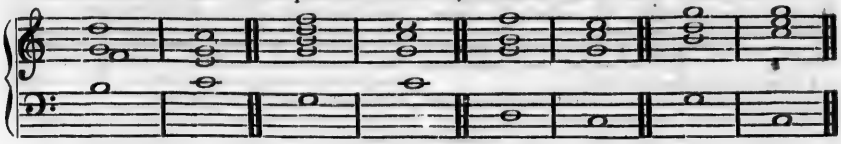
CLOSES OR CADENCES.

There is an analogy between music and language in regard to *punctuation*. A strain of music is divided into periods, and these are subdivided into clauses; these periods and their subdivisions being marked by closes, or cadences, more or less complete. These closes, or cadences, are found either in melody or in harmony; but the closes of a melody are more strongly marked and defined by the harmony with which they are accompanied.

The principal cadences are those which end on the tonic, or key-note.

The *perfect* cadence takes place when the chord of the tonic is preceded by the chord of the dominant. Its most complete and final form is when the tonic itself is the last note of the melody, and when the fundamental notes of the chords are placed in the bass. The dominant may be either a triad or a chord of the seventh—

When the chords are taken in other positions or inversions, the cadence will be less final and conclusive—



Perfect cadences in A minor—

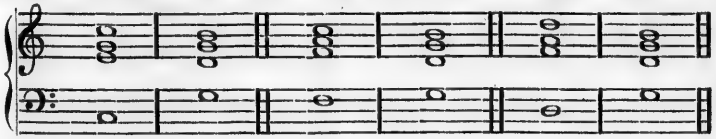
The tonic may be preceded by the subdominant—

C major. A minor.

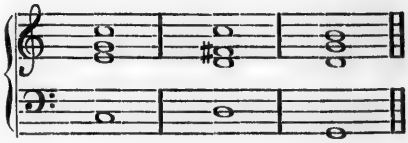
This cadence, from the subdominant to the tonic, is not used as a final close, except occasionally in old ecclesiastical music.

In the final cadence, from the dominant to the tonic, the seventh note of the scale (or leading note) must always be heard in one of the parts, and followed by the key-note. In minor keys (as well as major), this seventh, or leading note, must always be the major third of the dominant chord, and must ascend to the tonic by a semitone.

The next class of cadences are those which end on the *dominant*, and are called *imperfect*. The dominant may be preceded by various chords—most frequently by the tonic; but also by the subdominant, or the supertonic—



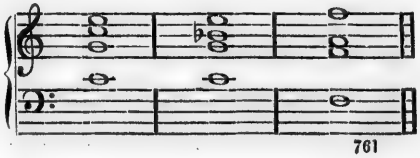
These closes on the dominant are never final; something else is always expected to follow them. A close on the dominant may be rendered more determined by making the preceding chord a dominant, and thus rendering the closing chord a temporary tonic. This is a transient modulation into the key of the dominant of the original key. In the key of C, the chord of D, the supertonic, may be converted into the dominant or dominant-seventh of the key of G—



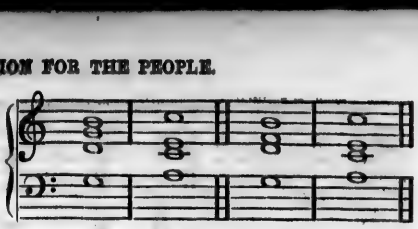
Or the chord preceding the close may be one of the chords derived from the dominant; the chord of the *diminished seventh*, or the chord of the *extreme sharp sixth*—

A cadence may take place by passing from the tonic to the *subdominant*—

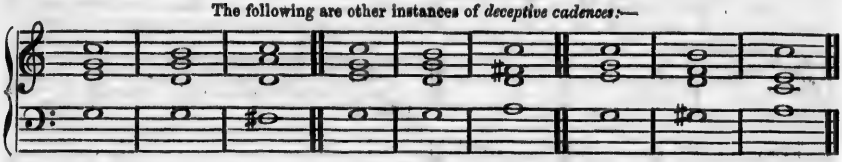
This may be made more decided by converting the tonic into a temporary dominant, by adding the minor seventh to its chord; thus making a transient modulation into the key of the subdominant—



When we expect a perfect cadence from the dominant to the tonic, the ear may be disappointed or deceived, by passing from the dominant to some chord different from the tonic. The most common of these is the *interrupted cadence*, in which the fundamental note of the dominant chord, in place of going to the tonic, rises, by one degree, to the sixth of the scale—

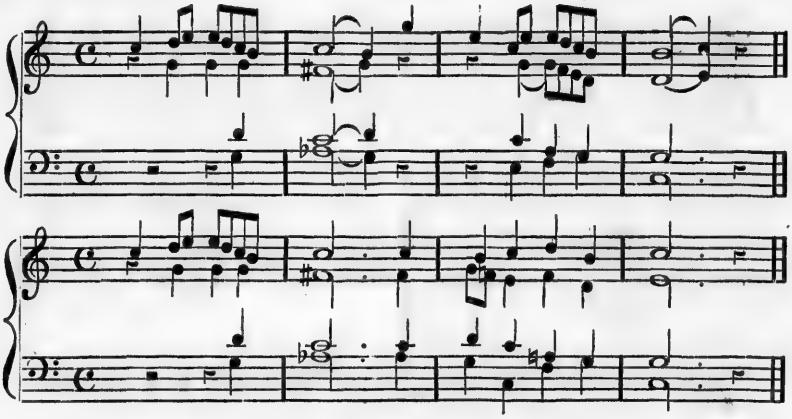


The following are other instances of *deceptive cadences*:—



The use of such cadences is to prevent the strain from coming to a final close, by disappointing the ear of the expected termination, and leading it to expect something more. This is well exemplified in the national air of 'God Save the Queen.' The first part consists of six bars; at the end of the fourth, the melody comes to a close upon the key-note; but, in the bass, this close is *interrupted* by rising from the dominant to the sixth—

The following examples also show how, by such means, variety may be given to the repetition of the same notes in a simple melody:—



COUNTERPOINT.

Counterpoint is the art of composition in two or more vocal or instrumental parts, in such a manner as to render each separate part smooth and melodious, and at the same time to combine them in the purest harmony. This art is to a great extent deduced from the principles of harmony already explained; but in its practice, various considerations and rules must be attended to, in order to prevent the music from being harsh, and unnecessarily difficult of execution. Many persons can heap together full chords on the organ or pianoforte, who cannot write, with purity and elegance, a simple duet for two voices.

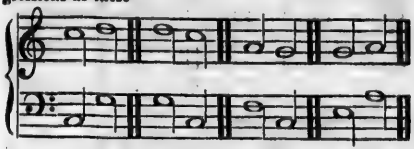
The rules of counterpoint depend in some measure on the number of voices or instruments for which music is written. The fewer the parts, the stricter are the rules applicable to them. In two parts, things are prohibited which are admitted in three or four. We shall therefore give the principal rules of counterpoint, as applicable to composition in two parts; and shall afterwards show how they may be relaxed when the parts are more numerous.

Counterpoint in Two Parts.

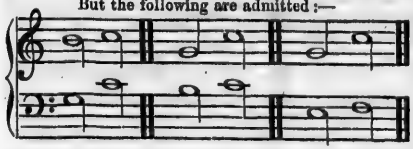
Two fifths, or two octaves, are not to be used in succession. This rule, which has been already explained, is of rigorous application in this species of counterpoint.

It is improper to proceed to *a perfect concord* by *similar motion*, except when one of the parts proceeds by a semitone. It is necessary to explain, that the octave and the fifth are called *perfect concords*, and the third and the sixth *imperfect concords*.

It is wrong, therefore, in two parts, to use such progressions as these—



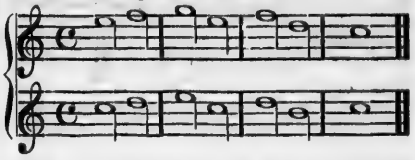
But the following are admitted :—

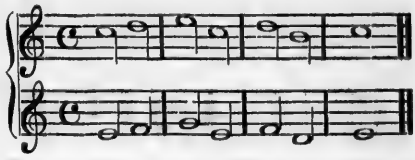


In the melody of each part, considered separately, the intervals ought, as much as possible, to be smooth and easily taken by the voice. This is a rule more of taste than of grammar, and the strictness of its application must depend on the nature of the composition. The ancient masters, who wrote for voices unaccompanied by instruments, did not admit into their melodies the intervals of the sharp fourth, the diminished fifth, nor the seventh. But in modern music, where the voices are supported by instruments, all these intervals are admitted. The *principle* of the rule, however, ought never to be lost sight of, especially in vocal music.

In considering the two parts together, the same principle should be observed in regard to the intervals of harmony. The intervals most freely used are the *major and minor third*, and *major and minor sixth*. The *unison* and *octave* are seldom used, as their frequent use would render the harmony meagre; there use is therefore chiefly confined to the beginning and end of a passage. The *fifth* is used more frequently than the unison and octave, but by no means freely. The *fourth* must be used sparingly, and generally with the precaution of being prepared and resolved; and the same thing is the case with the second, seventh, and other dissonant intervals.

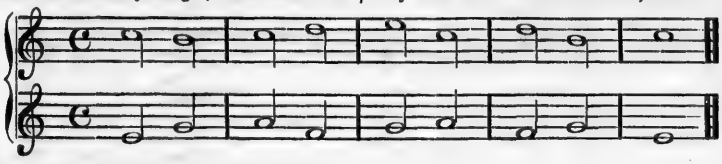
Although thirds and sixths are the intervals most freely used, yet a long succession of either must be avoided as monotonous. Such passages as the following, for example (the first in thirds, and the other in sixths), would be poor and trivial:—



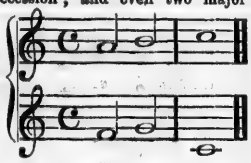


On this account, it is laid down as a rule, that no more than three thirds, or three sixths, ought to be used in immediate succession.

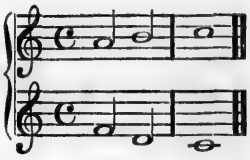
The monotony above exemplified is avoided, and an agreeable harmony produced, by using thirds and sixths so blended together as to prevent the recurrence of too many of the same kind in succession; thus—



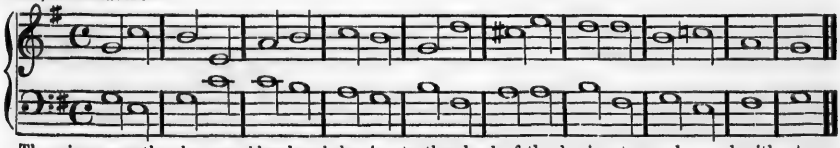
It is impossible, in any case, to use more than two similar thirds in succession; and even two major thirds in succession can be tolerated only in one case, which is, when the two upper notes are the sixth and major seventh of the scale, immediately preceding a close; as—



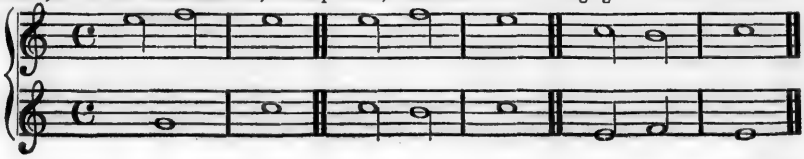
But it would be better to make such a close thus—



Counterpoint, even when it consists merely of concords, may be diversified by the use of the different kinds of motion—the *similar*, *contrary*, and *oblique*. The following, for example, is composed entirely of thirds, sixths, fifths, and octaves :—



The minor seventh, when considered as belonging to the chord of the dominant, may be used without preparation, as also the diminished fifth, or sharp fourth, when considered as belonging to the above chord—



Our limited space prevents us from going further into this branch of our subject, and passing over counterpoint in more than two parts, we arrive at

IMITATION, CANON, DOUBLE COUNTERPOINT, AND FUGUE.

The preceding pages contain an exposition of the principles of harmony, which are applicable to every species of composition. It remains to point out several resources which are found essential to the production of beauty and variety; as, without a general knowledge of their nature, so as to be able to perceive them when they are used, it is impossible to comprehend and enjoy the works of the great masters. Of these, the principal are *imitation*, *canon*, *double counterpoint*, and *fugue*.

Imitation is the repetition, in one part, of a phrase or passage which has already been heard in another part. The imitation may be made either in the unison or octave, or in some other interval above or below. Imitation may be made by *contrary motion*; that is, when descending intervals in the one part are imitated by ascending ones in the other, and *vice versâ*; and by *retrograde motion*, when the imitation begins at the end of the imitated passage, and goes backward. Imitations are likewise made by *augmentation*; that is, when the given passage is imitated in notes of double length; and by *diminution*, when this process is reversed. Imitation is *strict*, when the passage is precisely imitated in every interval; and *free*, when the figures of the notes are imitated, so as to produce a general resemblance without an exact imitation of the intervals.

Canon is that species of composition in which two or more parts are heard successively, in strict imitation. Canon is based upon imitation; but imitations are introduced and abandoned at the pleasure of the composer; whereas the whole piece or movement called a canon must be in strict imitation. Canon being simply strict imitation, it follows that there are as many kinds of canon as of imitation—in all the different intervals, by contrary and retrograde motion, by augmentation and diminution. Canons may be in any number of parts; but they are generally in two, three, or four. When they are so constructed as to close with a perfect cadence, they are called *finite*, in opposition to those called *endless* or *perpetual*, which go on till the performers think proper to leave off.

Double counterpoint is that species of counterpoint which is capable of being *inverted* in such a way that the upper part may be made the under, and the under the upper, without detriment to the goodness and regularity of the harmony. This inversion may take place most easily in the octave; that is, an under part, by being raised an octave, may often be placed uppermost, even though the parts had been written without this intention. But if the inversion is made in any other interval—that is, if the under part is raised a ninth or tenth, an eleventh or a twelfth—many precautions must be taken to render the parts capable of being so inverted. Next to double counterpoint in the octave, that in the tenth, and that in the twelfth, are the most practicable, and frequently used.

Fugue is the most complex and difficult branch of composition. A general explanation of its principles, however, will enable the student to understand the construction of the choruses of Handel, and the other great ecclesiastical composers, in whose works the grandest specimens of it are to be found.

Fugue consists of a *theme*, or subject, given out by one part, and imitated by the others according to certain laws, and carried on with that mixture of unity and variety which these laws are calculated to produce. These laws, moreover, though derived from the practice of several centuries, are by no means arbitrary, but founded on sound principles of reason and taste. The fugue is pre-eminently calculated to express the feelings and sentiments of a great multitude; and its noblest examples are to be found in sacred music—in the oratorios of the great German masters, and the anthems of the English cathedral service.

The fugue consists of certain constituent or elementary parts. First, the *theme*, or subject, which is a leading phrase or melody, constantly heard, in various forms or imitations, throughout the whole piece. Next, the *answer*, which is the imitation of the subject taken up by another part. The correctness of the answer depends on many considerations, which cannot here be entered into. But the great principle on which it depends is the division of the scale into two portions or phrases; the one extending from the tonic to the dominant, and the other from the dominant to the tonic; the one embracing the interval of a *fifth*, and the other the interval of a *fourth*.

VOICES AND MUSICAL INSTRUMENTS.

In order to reduce to practice the rules of melody and harmony already given, a correct understanding of the distinct qualities and uses of various voices and instruments is indispensable. For want of this, even in a choir containing good voices and respectable instrumentalists, all attempts to produce true harmony have been failures. A voice or an instrument *out of its place* may destroy the effect of a chorus otherwise well performed. Sometimes a *tenor* voice will attempt to lead the *trebles*; or a *flute* will be employed to play a *counter-tenor* part *an octave above its proper place*; or even a shrill and powerful female voice may be heard sustaining the notes written for the contralto, but in an inverted position, *above* instead of *below* the air, or soprano part. A professional musician may smile at our notice of these gross mistakes; but they are, unfortunately, very common among provincial choirs and amateur societies. It is not uncommon to meet in such associations an individual who can play with some taste and skill upon a certain instrument, while he does not understand its true position in the orchestra; or in other words, its relation to other instruments.

In collecting a vocal choir, the first difficulty is to find good and cultivated *treble voices*. On these the clearness, brilliancy, and effect of vocal harmony chiefly depend. The true treble voice is found only in the vocal organs of women and children. An artificial voice, extending into the treble register, and called *falsetto*, may be produced by a tenor or bass singer; but its effect is generally disagreeable. The treble voices of boys require good cultivation to subdue harshness and produce correct modulation; but before this object is gained, the voice generally changes its character by descending into the *tenor* register. For trebles, therefore, we must depend mainly on feminine voices; and one of the chief difficulties in the way of cultivating good vocal harmony in this country is found in the fact, that few young women acquire the art of reading music and singing correctly from notes, while even among these few, domestic cares and occupations often prevent a regular and progressive culture of their musical talents. The difficulty becomes still greater when we inquire for *contralto* voices. The contralto part, ranging between the treble and the tenor, and partaking of the qualities of both parts, is often attempted by men's voices, but requires a female voice, like that of Mademoiselle Alboni, to give it with ease and purity. A true voice for this part is rare; and as it cannot be performed by memory so easily as the *air* or *first treble* part, it requires also certainty in reading music. Tenor and bass voices, having moderately extensive registers, are common, as almost every man possesses one of these voices in some degree. When a voice extends from the lowest part of the vocal scale to the tenor C or D, having about a dozen notes, more or less, and preserving its strength and fulness of tone in the lower notes, it is called a *bass voice*, and constitutes the fundamental part in vocal harmony. Fortunately such voices are not scarce, though it is desirable that they should be more generally cultivated, so as to combine sweetness of tone with their sonorous power. One tenor voice differs from another, as it possesses more or less of the bass register. The counter-tenor, or con-

tralto voice, rises some four or five notes higher than the tenor, as this part rises also some four or five notes higher than the bass. Both these tenors are employed in full vocal harmony to fill up the spaces left between the bass and the treble; these parts are therefore sometimes called the *outer* parts, as the tenor and the contralto are termed the *inner* parts of a composition.

The four distinct voices thus briefly described may be combined in various styles. A vocal piece of music may be arranged in two, three, four, five, six, or more parts, and is respectively styled a *duet*, a *trio*, a *quartett*, a *quintett*, a *sestett*, or a chorus for a double choir. Each of these compositions admits several varieties. A duet may be formed of two trebles, or two tenors, or two basses, or of any two of these three parts. It is obvious that the trio must admit various combinations of trebles, tenors, and basses. The most common form of composition in four parts embraces the four distinct voices. In this style of harmony the choruses of oratorios and anthems are generally written. When any one part is doubled—that is, when two trebles, or two tenors, or two basses, are arranged with three other parts—the composition is styled a quintett, or a chorus for five voices: this is a rich style of harmony. We may observe here that the same composition which is arranged for treble, tenor, and bass voices, may be also arranged for male voices only, or, in other words, for tenors and basses; but in this case it will be generally necessary to change the key, so that the first tenor may be high enough to admit under it a second tenor and a bass arranged with distinct and harmonious intervals.

The discordant errors arising from ignorance of the principles just stated are so common, and so entirely destructive of good harmony, that too much can hardly be said to expose them. No singer should consider himself duly qualified, as a member of a choral society, until he has such a clear understanding of the distinct characters and positions of the various voices, and the clefs which determine their registers, as will enable him correctly to fulfil the intentions of a composer.

From the consideration of vocal parts, we now turn our attention to the most important instruments which may be employed to accompany choral performances. These instruments, like the various voices, may be divided into four classes—namely, treble, contralto, tenor, and bass. The chief treble or soprano instruments are the violin, the flute, the clarionet, the hautboy, and the cornet-à-piston. The lower notes of the same instruments are generally employed to fill up the second treble or contralto part; while to sustain the tenor, the instruments chiefly employed are—the *tenor* or *viola*, the *tenoroon*, the *bassoon*, the *tenor trombone*, the *French horn*, and the *tenor ophicleide*. For the bass part, the leading instruments are—the *violoncello*, or bass viol, the *contra-basso*, or double bass, the *ophicleide*, and the *trombone*. Of these and others employed in various parts of music, we may give a brief account:—

The first of all soprano instruments is unquestionably the *violin*, or, to employ the old Saxon name, the *fiddle*. If the organ is esteemed as the king of instruments with regard to its power and fulness of harmony, the violin may justly claim the same title when we consider its pliability and brilliancy, the precision, and indeed the perfection of the melody which may be produced upon it. But as it depends for all its modulations on the mind of the performer, it may be made the worst, as it is in other cases the best of instruments. The invention of the violin in its present form cannot be assigned to any exact date, though it is certain that, in various forms, it has been employed through several centuries. The first suggestion of such an instrument may be found in the vibration of a string tightly stretched over two small blocks of wood or bridges. Other strings, similarly stretched, but in various lengths, will, when agitated, produce various tones; thus seven strings would give the diatonic gamut of the seven notes. But such an instrument would be but a rude and feeble attempt to produce music: its vibrations, produced by a touch of the finger or the stroke of a quill, would soon die away, and even while they lasted, would have but little power, on account of the want of a sounding-board or hollow shell. To remedy this defect, a shell is made of resonant wood, on which the bridge is placed; and now the vibrations are strengthened and prolonged by being communicated to the shell. Still no long notes can be sustained; the instrument now resembles a lyre or a dulcimer, and has few of the qualities of the violin. But, in the next place, we discover that one string may produce several notes, if it is stretched over a *neck* or finger-board, upon which the finger of a performer may press the string at various intervals, so as to produce various vibrations or tones. We need not now have a string for each note; for one string will produce some dozen notes, while with four strings we can command three octaves and upwards, or more than twenty-four notes. Still we require some means of prolonging vibrations at our pleasure, and this is found in a bow of horse-hair: the fibres of which, when prepared with rosin, are capable of exciting vibrations of a musical string in a *sostenuto*, or prolonged and connected style. The modern violin is now complete, and, though still a simple instrument, seems to ask for no further improvement. Its parts consist of a head, a neck, a shell, a bridge, a tailpiece, and a finger-board. Four strings are fastened on the tailpiece, stretched over the bridge, and after passing over the finger-board, are tightened by movable pegs in the head of the instrument. The tones are then produced by a bow of horse-hair drawn across the strings. It is obvious that such an instrument may be constructed at the cost of a few shillings; but even good materials and fine workmanship are not sure of producing a melodious violin: while some old instruments, especially the Cremona violins of 1660, and others made by Straduarius, have a purity and bell-like clearness of tone which is highly prized by musicians. The violin, therefore, varies in price from ten shillings to £50 or £100. The uses to which this admirable instrument is applied are chiefly two: it is employed in *solo* performances, and in *concerted* music. In the first style, its display of power is curious and interesting; but in the latter it is more important. As a solo instrument, it is capable of producing the most rapid, or brilliant, or smooth melodies, or may be played in harmonious chords. Paganini introduced a style which may be called trick-playing, which, though curious and amusing, has received too much attention; among many other tricks, Paganini excited surprise by playing a solo on the fourth string. The violin may also be played in the *pizzicato* style, without any use of the bow; and by a peculiar use of the fingers and the bow, tones called harmonics may be produced, distinct from the common tones of the instrument.

But the violin is more important when regarded as the *leading treble* or *soprano* instrument in orchestral or concerted music. Its usual compass extends from the tenor G to D *in altissimo*, including more than 2½ octaves; and several additional high notes may be clearly produced by a skilful performer. But the chief ambition of the violinist who aspires to be useful as a member of an orchestra, should be to play the leading air, or soprano part, with *truth*, *steadiness*, and *flowing clearness of tone*, united with *precision in time*.

The same instrument, when employed to sustain the second treble part, is called the *second violin*. In this part, the lower tones of the instrument are chiefly employed; and as this part is not so prominent as the leading strain, the second violin is sometimes underrated with regard to its importance. It does not often require the brilliant execution of the first violin; but steadiness and correctness of time and tone are demanded in this, as in every part of concerted music.

The *tenor* or *viola* is another stringed instrument made precisely like the violin, but larger in all its parts, and consequently having a *lower register* of notes. Its usual compass extends from the bass C to the

treble C. Several higher notes may be added. It thus appears that the viola bears to the violin the same relation which the tenor voice bears to the treble or soprano. This valuable instrument is too much neglected; for there are no other instruments which can adequately supply its place in sustaining the tenor part. Though in choruses, and sacred music generally, it seldom demands brilliant execution, the due management of its strings requires judgment and taste, as it is apt to produce nasal tones. To avoid these, the upper strings should be played stopped, or in other words, the notes D and A should seldom be given on the open strings.

Another noble instrument of the violin class is the *violoncello*, or *bass-viol*, of which the register extends commonly from double C to D *in alt.* of the bass. Several higher notes may be added. As the violin is the rival of the soprano voice, the violoncello may be regarded as capable of making the nearest approach to the powers of a fine bass voice.

The *contra-basso*, or double-bass-viol, is the largest instrument of the violin class, and is employed to produce a bass part an octave below the violoncello. For this purpose the instrument is provided with the thickest strings employed in music, which are tuned in fourths. The lowest string is tuned to A, the second to D, and the highest to G.

The above-mentioned instruments are the only truly pliable, and, indeed, perfect instruments which have been invented. As the stopping of their strings, in order to produce the various tones, is not regulated by any mechanical contrivance, but depends purely on the mind of the performer, the ideas of tones (which are formed in the mind of a musician with far greater purity and precision than can be expressed by any mechanical process) can be at once interpreted on the pliant strings of the violin and its fellow-instruments. To explain this important advantage more clearly, it must be observed that, though the ordinary musical scale, as represented by the key-board of the organ or pianoforte, contains only tones and semitones, the *mind* can think of *quarter-tones*, and even demands their use, in order to realise pure ideas both in melody and harmony. But these quarter-tones can be produced truly only upon stringed instruments of the violin class. This distinction of tones must not be regarded as too finely-drawn; for it is one which, by the use of a little argument, might be made plain to every one possessing the faculty styled an 'ear for music.'

These observations may suggest the remark, that the multiplication of imperfect instruments has not aided the progress of pure music; and we may venture to add, that if all the array of wooden and brass tubes, and even the key-board instruments, the stately organ and the convenient pianoforte, were swept away, leaving behind only the five *true* stringed instruments already described, then, though we should be deprived of many particular effects and varieties of quality in tone, though we should (happily) lose all the grand effects of *noise*, so often presented to the public as substitutes for music, still no essential part of melody or harmony would be lost. Every chord and passage of harmony might be produced by the four distinct voices and their corresponding stringed instruments. Before we notice other instruments, we must remark that the first care of every Choral or Harmonic Society, next to that of procuring treble, contralto, tenor, and bass voices, should be to find able performers on violins, violas, and violoncellos. Other instruments should be regarded as subsidiary.

The sound of the violin is produced, as we have seen, by the vibration of a string, aided by a shell or sounding-board. The most important among other means of producing musical tones, are the vibrations of air in tubes, excited either by a peculiar action of the lips, as in performance on the flute; or by a reed, as in the mouthpiece of the clarionet; or by the trumpet mouthpiece, used for all brass instruments. All the wind instruments, consisting of tubes formed of wood or metal, may be divided (like the violin and its associates) into four classes, according to their relations to the four voices. We may, in the first place, briefly notice the wind instruments made of wood:—

Among the *treble* instruments of this class, the *clarionet* may perhaps claim the first notice; for though its crude tone, when not subdued by the performer's taste and skill, is very unpleasant, yet when duly governed, the same vibrating reed may produce tones which blend well with the human voice. The clarionet is composed of a straight wooden tube, with holes or ventages, to be stopped by the fingers, and also thirteen keys. Its register is extensive, reaching from the low tenor E to C *in altissimo*; thus comprising nearly four octaves, with all their semitones. When well managed, it gives a firm and strong support to treble voices, and may even take the place of the violin; but when in the hands of a vulgar performer, it produces the well-known effects so often heard with pain by musical ears in the village churches of England.

The *hautboy*, or *oboe*, is another reed instrument of the treble class, the sounds of which are produced by a reed differing in form from the reed used in the clarionet. Its register extends from the middle C to C *in alt.* Handel had such an appreciation of the hautboy, that he not only employed it generally to aid the treble voices in his choruses, but also wrote concertos to exhibit its powers.

The *flute* is a wind-instrument without a reed, and its tones are produced, like those of the *pan-pipes*, by the lips of the performer injecting air, with various degrees of force, through the *embouchure*. The vibrations are regulated by six ventages, stopped by the fingers, and eight keys. The flute gamut contains more than 2½ octaves, extending from the middle C to A *in altissimo*, and its chief merit as an orchestral instrument consists in the fluency and brilliancy of its higher notes. The lower notes of its register, from middle C to G *in alt.*, have a pleasing quality of tone, blend well with female or soprano voices, and are employed with good effect in solo execution and duets with the pianoforte; but in the orchestra these lower flute-notes are of little use, as their power is much inferior to that of the violin or clarionet. It should be observed that two flutes taking the part *in alt.* are sufficient to accompany a very powerful orchestra.

The *octave-flute*, the *fife*, and the *piccolo*, are instruments like the concert-flute, but of a smaller calibre, and are used chiefly in dance-music and military bands. The *flageolet*, which produces shrill sounds like a whistle, is also used in light secular music. All these small instruments of the flute order may be regarded as rather decorative than essential in the orchestra, though in waltzes, quadrilles, and some parts of symphonies, they produce good and lively contrasts with the tones of lower instruments.

The same wind-instruments formed of wood, when taking a second-treble or contralto part, are termed respectively *second-flute*, *second-clarionet*, or *second-hautboy*. It may perhaps be regarded as a defect in the modern orchestra that (excepting the *bassoon*) we have hardly one *tenor* instrument in wood to accompany the tones of the clarionet. The *tenoroon*, a wood instrument played with a reed, is seldom employed. The *bassoon*, a larger reed-instrument, has a very extensive register, descending to double B flat in the bass clef, and rising into the contralto scale. It may therefore be employed to accompany and assist either tenor or bass voices, with which its tones blend remarkably well. As it possesses correctness of intonation and versatility in execution, it may justly be esteemed as one of the most useful instruments in the orchestra.

The most powerful wind-instruments, including the bugle, the cornopean or cornet-à-piston, the trumpet, the Sax-horn, the French-horn, the trombone, the bass-horn, and the ophicleide, are made of brass, and are chiefly used in military bands. In the orchestra these instruments must be employed with refined taste and discretion, as, when coarsely played, they overpower

the sounds of the more delicate instruments to which they should give assistance in *forte* passages. The *bugle*, like all the instruments of this class, produces its sounds by means of a trumpet mouthpiece, through which a current of air is thrown into a metal tube, increasing in diameter until it opens at the end in the shape of a bell. The bugle has a treble scale, and produces, especially in the open air, clear, shrill, and lively tones. But lately, it has been in a great measure superseded by the use of another brass instrument, in some respects superior—the *cornopean*, or *cornet-à-piston*, which combines the qualities of the bugle and the trumpet. Its tones are regulated by the use of three valves; and its scale, including the semitones, extends from the tenor F sharp to C *in alt.*, including about two and a-half octaves. Music for the cornopean is generally written in the key of C, or F, or G; and transposition into the other keys is easily effected by the use of several *crooks*, or additional joints, which alter the depth of tone. Thus music written in C, when played with the F *crook*, is in the key of F. When employing its lower tones, the cornopean may take a contralto part, and is then styled the *second* cornet or cornopean.

The tones of the *trumpet* are well known, as they are very powerful. Its powers of melody are now extended by the use of crooks, keys, and valves; but originally it was an instrument of the most simple kind, consisting of a tube of metal (or even a cow's horn) furnished with a mouthpiece for the compression of the blast of air. In the modern orchestra, the improved trumpet is very effectively used to accompany songs of a bold or martial character, and in the loud and triumphal parts of grand symphonies.

To sustain that important middle part, the *tenor*, no brass or wind instrument is so effective and pleasing as the *French-horn*, or *corno*. It is the most mellow of all brass tubes, and is especially useful in the quality of its long-drawn and well-sustained tones. In compass it descends an octave below that of the trumpet. As its modulations are chiefly produced and governed by the lip, guided by the ear of the performer, no amateur can hope to excel on this instrument unless he possesses a very correct appreciation of musical intervals; or, in common language, 'a good ear for music.' In its construction the corno consists of a long tube of brass, coiled in a circular form, and gradually increasing in diameter from the mouthpiece to the end of the tube, which opens widely like a bell. The key or pitch of the horn may be changed by the use of five crooks, or additional pieces of brass tube, fitting in the smaller end of the instrument. Its tones are also modulated in flats and sharps by the insertion of the performer's hand into the bell or opening of the tube. Music for French-horns is generally written in the natural scale of C, without signatures of flats and sharps; and its tones are adjusted, by the use of crooks, to the keys in which other instrumental parts are written. The corno does not excel in rapid execution, though it has been sometimes successfully used as a solo instrument. We may here mention some improved brass instruments called *Sax-horns*, made in various sizes, and possessing various registers of notes; these have been used in harmony very effectively, especially by the 'Distin Family.'

The *trombone*, or the *sackbut* of ancient times, is a very powerful instrument, and may be described as a trumpet, the tones of which are regulated by a tube of brass sliding within another, so as to shorten or lengthen the column of air. An instrument made on this principle was discovered among the remains of Pompeii. It is now made in three sizes, and is termed respectively an *alto*, a *tenor*, or a *bass trombone*. The last-mentioned, having the longest tube and the most extensive slide, has a register of notes extending from double C to the tenor G, including all the semitones. The scale of the tenor trombone extends from double F sharp to the treble C, while that of the alto trombone reaches from the tenor F to the treble F. The trombone, possessing the quality of the trumpet, but in a lower register, is one of the most effective instruments in a military band; but in the orchestra, or when employed in sacred music, it must be used with discretion and reserve.

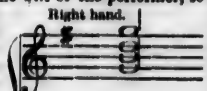
The *ophicleide* is another very powerful bass instrument, but possesses a fine mellowness of tone, and may be played with a pleasing softness of expression, so as to blend well with both wind and string instruments. The variety of its tones is produced by the use of keys; its register is extensive; and when made in a smaller size than that used for the bass, it produces firm and mellow tones in the tenor scale. The old instrument called a *serpent* has been in a great measure superseded by the ophicleide; but still there is something in the tone of the serpent which is suitable to sustain a firm bass, or double bass part in slow and solemn music.

The instruments which have thus been briefly described constitute the principal parts of a modern orchestra, and by blending or employing in contrast and harmony their various tones in various proportions, the composer produces the effects which are analogous to the powers of colour in painting. But all the instruments named are by no means necessary in forming a little band to accompany the performances of a choral society of moderate power. Two violins, or a clarionet judiciously played, may guide and assist the treble voices; second violins, or (if these cannot be obtained) a second clarionet, may help the second treble or contralto voices, and we may also observe that the upper strings of the viola may be used for the same purpose; but this important instrument is chiefly useful in sustaining a steady tenor part. Violoncellos, and a double bass (or *violono*), will give the best support to bass voices. If wind instruments are added to the band, a flute may give relief and brilliancy by taking the part *in alt.* in choruses and full passages; a bassoon may support either the tenor or the bass, or play a mixture of both these parts suited to the capacity of the instrument; and if more instrumental power is required, the cornet, the corno, and the ophicleide (or, in loud passages, the trombones) may be employed.

The above instruments (excepting the violin class) do not severally produce chords. Each plays only *one* part. We may now give some brief account of *instruments of harmony*, upon which chords or full scores may be played. Among these the *organ* justly claims the first place. Though it has been styled 'the king of instruments,' it is more properly described as a full orchestra of wind instruments, all supplied with wind from a pair of bellows, and placed under the control of one performer. This vast machine of music has no necessary restriction of scale. Its compass may extend from the lowest to the highest musical note appreciable by the human ear. The deepest tones produced by the pedal-pipes have been compared to 'harmonious thunder,' while the highest notes of the smallest metallic stops have the shrillness of a canary's whistling. The organ at Haarlem contains, it is said, 5000 pipes; that in the new church in Amsterdam has 52 whole stops. The immense powers of the organ in York Minster, and that in the Town-Hall of Birmingham, are generally known. The mechanical means by which such an extensive instrument is brought under the command of the hands and feet of one performer are rather complicated, but consist of the following principal parts:—1. A series of stops; 2. A wind-chest; 3. Bellows; 4. Valves and levers to open or close the pipes; and 5. The key-board. Each *stop* consists of a row of pipes answering to the whole gamut or register of the organ, so that a composition may be performed upon one complete stop. But to produce the sound of many instruments, several stops are employed simultaneously. Of these the most important are the *open diapason*, the *stopt diapason*, the *principal*, and the *fifteenth*. When these stops are drawn, the melody and harmony produced are distributed through three octaves.

Other stops are named respectively the *sesquialter*, the *cornet*, the *trumpet*, the *bassoon*, the *flute*, the *cremona*; indeed the number of stops, like that of instruments in an orchestra, may be increased at pleasure.

When a slide is withdrawn, so as to open any stop to the gust of air from the wind-chest, that stop is said to be *drawn*. It may be closed at any moment by the hand or the foot of the player; indeed, the foot can, with a touch on a pedal, bring into action, or reduce to silence, in a moment several rows of pipes equal in power to a large orchestra. The key-board of a first-class organ is divided into three compartments. Of these the lowest commands a series of stops, having generally a soft quality of tone, and collectively styled the *choir organ*; the middle range of keys commands the most powerful stops in the *great organ*; while the third part of the key-board commands the *swell organ* (a series of stops enclosed, as in a box or cupboard, with sides opening or closing at the will of the performer, so as to increase or diminish gradually the volume of sound). The most capacious pipes in the organ are commanded by the pedals played by the feet. To show the extent of the sounds commanded by the hands and feet of an organist, we may give the following chord:—



To find the number of distinct instruments or pipes which are speaking when this chord is played, we have simply to multiply the number of the notes in the chord by the number of drawn stops. Thus if thirty full stops are drawn, the number of speaking-pipes will be 270, or equal to this number of distinct instruments. The 'distinguishing merit of the organ is its power to form and prolong the fullest and most artificial harmonies.' Yet its grandeur and vast compass of tones must not lead us to neglect its defects. It is not a perfect instrument: it cannot accommodate itself to every style of music; but, like all other imperfect instruments, requires music to be purposely adapted to its construction. As it cannot impart to melody the variety and delicacy of expression found in the human voice and the violin, it depends for interest on the boldness and precision of its modulations in harmony. A good composer for the organ must therefore have an extensive command over the resources of modulation, and especially in the *fugue* style. The concertos and fugues of Handel, some pieces by Mendelssohn, but, above all, the fugues of Sebastian Bach, are the finest specimens of organ music. The last may indeed be regarded as the most elaborate modulations of harmony which musical genius has produced, and the organist who can fairly execute them may justly claim the highest rank in his profession.

The *pianoforte* is another instrument of harmony, having an extensive compass, and serving as a very convenient substitute for a small orchestra. It may be regarded as the most characteristic instrument of modern times, and its peculiarities have modified the style of many musical compositions. Like the *harpsichord*, it produces tones by the vibrations of wires; but in the harpsichord the wires were vibrated by a quill: in the pianoforte the wires are struck by a hammer with a surface of leather or felt; and as the force of the blow can be moderated by the touch of the finger on the key-board, the performer has a command over various degrees of force or delicacy of expression. In this respect the pianoforte (a German invention in 1766) is far superior to the old-fashioned harpsichord, which is now very seldom seen. The same lever which impels the hammer against the string, raises at the same moment a damper from the upper surface of the wire, so as to allow free vibration; and immediately when the finger is lifted from a key, the damper falls upon the string commanded by that key, and stops its vibration, so that its sound does not mingle with that of the next note struck, which would often produce confusion instead of harmony. It is important to observe that, in a great number of instruments (especially those of the upright kind, called cottage pianofortes), the action of the dampers is defective, and consequently the music produced is confused. The great imperfection of all pianofortes is their incapability of sustaining unbroken sounds beyond a few seconds.

In slow and sacred music the pianoforte fails; and as it requires a constant percussion of its wires to sustain its full tones, its powers are most advantageously displayed in rapid and brilliant compositions, such as waltzes, quadrilles, variations of melodies, and sonatas. Beethoven and Mendelssohn produced some of the most beautiful and classical music for this instrument. Other players and composers have displayed its powers in a style which has been termed 'wonder-playing,' and which may be compared with 'trick-playing' on the violin. Playing elaborate and rapid passages in octaves, and distributing chords, in the *arpeggio* style, over the full extent of the key-board (which contains 6½ octaves), are two of the most brilliant manœuvres of the modern school. In concert with the flute, the violin, and the violoncello, the pianoforte is exceedingly effective and pleasing, as its chords and brilliant arpeggios make a good contrast with the sustained tones of the other instruments.

The *harmonium*, another instrument with a key-board, capable of producing full harmonies, yields its tones by the pressure of wind upon tongues made of metal in various sizes. It is the nearest approach to solving the problem how to produce organ-tones from a small and portable instrument; but the quality of its tones cannot be compared, for mellowness and variety, with the blended tones of organ-pipes. The *concertina* and the *accordion* are small instruments producing tones by the vibrations of metallic tongues, like those employed in the harmonium.

The *harp* is an ancient stringed instrument, and in its modern form is sometimes effectively displayed in solo performance, though its capabilities are greatly inferior to those of the pianoforte. Its strings are kept in vibration by the fingers of the performer, without the use of a key-board, and each string produces only one distinct note. The *guitar*—which, in its simplest form, is also an ancient instrument—has a neck with several stops or *frets* which produce several notes from one string. It has now six strings, and commands a range of three octaves; but though it is a pleasing accompaniment to a solo treble voice, it is a very feeble instrument, as its tones are transient, and it can be played well only in a few keys. The ancient *lyre* and the *lute* were in some respects like the guitar. The *psaltery* and the *dulcimer* were comparatively rude instruments, producing tones from wires, like those in a pianoforte, but having no *dampers*, and consequently blending tones in a confused style, very offensive to a cultivated musical ear.

Bells, *cymbals*, *triangles*, and even rattling *bones*, are used to mark the time, and add to the effect of some light varieties of music. The *gong* and the *drum* are employed for the same purposes, chiefly in military music. The *tom-tom*, a large, rudely-constructed drum, is still a favourite instrument of music (or rather of noise) among savage tribes. Church *bells* are still favourite instruments among many rustic amateurs possessing primitive musical taste; but they may be commended rather for the strong physical exercise which they afford to the ringers, than for any truly musical pleasures which they give to hearers.

In conclusion, we may again observe that only a few of the instruments noticed in this article are really necessary for the production of good instrumental, or the accompaniment of choral music. The sensuous effect of music depends partly on fulness and quality of tone; while music, in its more intellectual sense, depends upon the relations of various intervals in sounds arranged in melody and harmony. With four or five well-trained voices, especially when they are supported by the three principal stringed instruments—the *violin*, the *viola*, and the *violoncello*—we are able to produce, not the loudest, but the most beautiful and classical music of the best composers.

HOUSEHOLD HINTS.

UNDER this head we propose to offer a few advices connected with Housekeeping in general—referring to the choice, furnishing, and management of dwellings; the cleaning of furniture and apparel; the destruction of vermin; precautions as to fire and water; the preparation of small domestic manufactures; and lastly, to the duties of the dressing-room and toilet.

CHOICE AND FURNISHING.

Choice of a House.—There are certain important points on which you should obtain satisfactory information in making choice of a house. *First*, take care that it is not damp. Dampness may arise from several causes, but imperfect drainage, and a too close contact of the floors with the ground, are the principal. When a house is damp in any part, no matter from what cause, it is advisable by all means to avoid it, for it may produce the most pernicious effects on the health of your family. *Second*, see that the house has a free open exposure for fresh air, and, if all other circumstances suit, prefer that which has an exposure to the south, and possesses the beneficial influence of the sun's rays. A house with a pleasant southern exposure enjoys a climate several degrees warmer than a house which is not so favourably situated. In general, too little attention is paid to this circumstance, though it has been proved in the clearest manner that mere sunlight, without reference to heat or air, exercises a most powerful influence on the health and energy of the human frame. *Third*, ascertain if there be a plentiful supply of good water in the premises, and if there be proper means at hand for drying and bleaching clothes. *Fourth*, learn whether the vents go well, and do not smoke. The inquiries you may make in reference to freedom from vermin, exposure to public nuisances, respectability of neighbourhood, and other particulars, are left to your own judgment.

Furnishing.—When you design to furnish a house, take care to set out on a right principle in the selection of articles. It is essential, for the sake of neatness, and for a pleasing effect to the eye, that there should be a harmony of colours, and also a similarity of style in the main articles of furniture. Therefore, if you do not exercise a little taste and judgment in your *first* selections, you may find that you have committed a blunder which will cost you much subsequent annoyance. For example, let the tints of the carpet, of the paper or paint of the walls, and of the window-curtains, be all in harmony in each room—that is, either possess a general resemblance of colour, or various colours in pleasing contrast and harmony with each other. If the colour of your curtains be scarlet, and the colour of your walls or carpet blue, a most inharmonious and unpleasing effect will be produced; but brown and green, or green and gold, will be in harmony, and may therefore be placed together. Carpets being the most expensive articles, it is safest to buy them first, and then to let their colour lead the tone and style of curtains, paper-hangings, chair-covers, hearth-rugs, and all other articles. It is also a good economical plan to buy carpets of the same pattern for several rooms, because, in the event of removal to a house with different-sized apartments, a piece of one carpet may be taken to eke out another. It is also of prime importance to have the patterns in keeping with the size and style of the apartments; for nothing looks so patchwork and out of place as large and showy patterns in small old-fashioned rooms—nothing so mean as paltry fabrics in large modern apartments. This remark is alike applicable to every article of furnishing, and demands, on the part of the housekeeper, the strictest attention. Brilliant gaseliers, mirrors, panellings, paper-hangings, and the like, are admissible only into suitable apartments; and the vulgar-rich will often be disappointed to find that a few well-chosen and properly-arranged articles produce a much more elegant effect than all their lavish, because tasteless and inharmonious display.

Respecting the material of carpetting, matting, floorcloths, and the like, the best your means can afford will ultimately be found to be the cheapest. There is always a great deal of showy but trashy material in the market, which, from its cheapness, is apt to allure the inexperienced; a few months' wear, however, destroys not only its appearance, but renders it next to useless. Cotton mattings, carpetings, and the like, can never compete with a genuine woollen fabric; and the closer and heavier a woollen fabric, the more likely is it to give satisfaction. In purchasing oil-cloth, see that the colours are of a durable kind, and that they are laid on stout, close canvas. Genuine coir and manilla are strong, durable materials for matting, well adapted for stone lobbies and passages. Dressed skins—plain or dyed—make a very elegant and comfortable mat, but they require to be kept dry; and if not thoroughly prepared, the grease which exudes from them will irremediably destroy the carpet on which they are laid.

Tables, Chairs, &c.—When you are bargaining for tables, chairs, and other wooden articles of a fine quality, take care to specify that they must be of a solid fabric, and not veneered. Veneering is only tolerable in a few articles which are not to be subjected to much tear and wear; nevertheless, it practice has begun of veneering articles in daily use, such as chairs and tables, and consequently they are soon destroyed. This practice, we are sorry to say, is done in cases where the highest price is paid for solid articles, and we mention the circumstance to put you on your guard. Examine closely the back and seat-frames of every mahogany chair, and reject it if it be veneered. In the case of veneered articles, as cabinets, chests of drawers, wardrobes, sideboards, and the like, see that the veneers be laid on a substantial well-seasoned ground; if not, the veneering is sure to warp and blister after a few months' exposure to the ordinary heat of a dwelling-house. In ordering sofas, chairs, and mattresses, you should also take care to bargain for genuine hair stuffing, for in many instances the stuffing is composed of what is technically called *pob*, or a composition of tow, wool, and other kinds of rubbish. Likewise the hair should be well baked and prepared. We have seen a hair sofa, for which the highest price was paid, swarming with a species of louse, shortly after being sent home from the upholsterer's, in consequence of the animal substance about the hair not having been properly dried by baking. In every case you will be safer to pay a fair price to a respectable tradesman, than to purchase from the self-styled 'cheap warehouses;' for though the articles may be of elegant enough designs, and look as brilliant as French polish can make them, yet in a few years they will become warped, disjointed, and ricketty.

Fire Grates.—In choosing fire-grates or stoves for your rooms, do not buy those which have burnished steel fronts, as they require a considerable degree of care in cleaning, and are very liable to rust during summer when not in use. The best and neatest, as well as the cheapest grates, are those which are made of cast-iron, and of an ornamental pattern. Let the grates which you select be small or of moderate size in the fireplace. Wide, open grates, by admitting cold air into the chimney, are exceedingly liable to smoke. Kinnaird and Register-grates, with fire-brick or cast-iron backs, and with fronts of cast-iron ground smooth,

are now most generally sought after; and when neatly constructed, are fit for all ordinary purposes. The brilliant grate-fronts exhibited in the windows of the ironmongers are fit only for the houses of the wealthy, who have plenty of servants to keep them in order. Avoid the grates with low-placed bars and open fenders, unless your house is specially constructed for them, as they are apt to cause accidents by fire. In purchasing fire-irons, choose those of solid-wrought iron or steel; have nothing to do with any combination of brass and steel, as they are sure to become loose and ricketty after a few months' use.

Hardware—Cutlery.—Be particular in your choice of hardware and cutlery, as there is now no branch of British manufactures in which there is greater deception and knavery practised. There are hundreds of workshops in which these articles are made only for 'cheap sales,' and 'sales by auction;' and in such cases only the most worthless materials are made use of. Prefer articles which are cast or hammered to those that are struck up; and [illegible] that your cutlery has a full [illegible]ound ring, and is su[illegible]ciently elastic to resist all ordi[illegible]y pressure. Avoid the purchase of fantastic shapes and patterns, not only from the difficulty of matching any article in the event of loss or breakage, but from motives of good taste.

Plate.—Whatever silver articles you require, buy them of a genuine kind, or of sterling silver plate, which always keeps its value, however old and worn it may become. Avoid all plated goods, for the plating is not long in wearing off, and then the article is valueless. A tarnished plate, fork, spoon, or salver, has an excessively mean appearance. In fact the only tolerable plating is that of electro-plating on steel, and even that, substantial as it appears, is far from being unobjectionable. If you find it inconvenient to purchase sterling silver plate, your most economical plan, consistent with elegance of appearance, will be to purchase a few articles of German silver or albata, which closely resembles sterling silver in texture and colour; it is not just so white as sterling silver, but the difference is not noticed, unless a close comparison be made. In hardness and durability, it is much superior to sterling silver, and its price is in some cases only about a tenth of what genuine plate would cost. German silver is now manufactured to a large extent in England, and is made into spoons, forks, ladles, teapots, salvers, dish-covers, and all other articles for the table. It is not probable that German silver will ever be purchased to a large extent in order to supersede the sterling article, because it possesses no intrinsic value like bullion, but it forms a great stretch in advance of plated or Britannia metal goods, and is likely to come into extensive use. The articles in Britannia metal were once of a durable fabric, but they are so no longer; their good character is gone, and they should on no account be purchased by an economical housewife. A teapot, for instance, of that metal, for common use, and costing six or eight shillings, will probably not last twelve months, while a teapot of German silver, costing from eighteen to forty shillings, will last for fifty years. The German silver article is thus, in the long-run, by far the che[illegible]per of the two, independent of all considerations as to elegance of appearance.

Gilding.—Order all the gilding of your picture-frames and other articles to be done in oil. Oil-gilding is not susceptible of flatting and burnishing like water-gilding, but it is infinitely more durable. You may wash an oil-gilt frame without injuring it, whereas one that is water-gilt cannot be cleaned, and is soon tarnished. We never knew a gilder who would gild in oil unless it was expressly insisted upon.

Earthenware and China.—In purchasing sets of earthenware articles for the table, also take care to set out on a right plan. Select that set which, in case of breakage, can at all times, and in all places, be easily matched. If you buy a set of table-ware which is peculiar or rare in its pattern, and afterwards break several pieces, you may be put to a very great degree of trouble, or even find it impossible, to restore them. Thus a peculiar set of earthenware or china, however beautiful and cheap, may ultimately prove a source of vexation and considerable expense.

Glass and Crystal.—Articles of this kind are now fabricated in the most elegant shapes and designs, and at extremely moderate prices. There are two sorts in the market—cut-glass, and glass moulded, so as to resemble cut patterns (see No. 21). The latter is cheap, but by no means so elegant or durable as the former, as it is only sound material which will stand the polisher's wheel. Observe, in purchasing glass, that it be well annealed, as otherwise, on the first exposure to hot water, it will fly in pieces. In this respect cut-glass is always preferable to that cast or moulded.

Baths and Foot-Warmers.—Few houses possess the convenience of baths (see No. 30), but every one may command the use of small movable bathing vessels for the feet, or for infants. The best foot and leg baths are those made of wood, or of well-tinned sheet iron; those of earthenware are exceedingly liable to break, and, besides, are very expensive. There are various kinds of close vessels for holding warm water, which are used for producing warmth in bed. One of the best articles of this nature which we have seen is a vessel made of sheet tin. It measures twelve inches in length and six inches in diameter, being round like a bottle, with bulged-out rounded ends. At one end there is a small brass screw cap, placed over an orifice at which the water is admitted. This cap being well screwed down, and a small leathern washer being used to assist in the tightening, not a drop of water will ooze out when the vessel is laid in bed. With this simple apparatus, tied in a flannel bag, the feet or any part of the body will be effectually warmed either during illness or in the cold of winter. Stoneware vessels, shaped so as to lie closely to the feet, limbs, or chest, are now largely fabricated, and, if well stoppered, have the advantage of retaining the heat longer than vessels made of metal.

ORDER AND MANAGEMENT.

Housekeeping.—Every good housewife is expected to keep a regular and continuous account of her income and expenditure. This is indeed perhaps the most essential in the routine of domestic duties, and she must possess an ill-regulated mind, or have had an insufficient education, who neglects it. When properly set about, and methodically managed, there is little or no trouble in keeping the household accounts. Some housewives have one method, and some have another. Always presuming that we are addressing young housewives in the middle ranks of society, with whom frugality is an object, we beg to suggest the following simple plan of keeping house accounts:—Procure a small slate-book—that is, a little book composed of three slates, bound in a plain cover. This, which you write upon with a slate pencil, is your *day-book;* it is always at hand for you to scroll down any note of outlay, and will keep several days' or a week's accounts at a time. At any leisure moment, you carry the entries of outlay from the slates to a small ruled paper-book, which is your *ledger.* One page of this is devoted to money received, and the opposite page to money paid out. By doing this regularly, and comparing the entries of sums received with the entries of sums expended, so as to see that they square with each other, you will find that you possess a complete record of family expenses, satisfactory alike to yourself and to your husband, should he make any inquiry into the subject. The keeping of an account of receipts and disbursements, in this or any other convenient manner, is calculated to have the most salutary and agreeable effects. The tendency to over-expenditure, or living beyond the means, is constantly checked, or at least you are not deceived upon the subject, and in all likelihood much future distress in circumstances is avoided.

In referring to housekeeping accounts, we must put you on your guard against the very mischievous prac-

tice of buying on credit, and running up bills with tradesmen. If you can at all avoid taking credit, do so. By paying for every article with ready money, you will possess two decided advantages—you get everything cheaper as you want it, and you can go anywhere to seek out the best markets. Housewives who run up bills, beyond weekly or monthly convenience, become the slaves of tradesmen, and can possess no proper independence of principle or self-respect.

Servants.—The old practice of hiring domestic servants for six months at once is rapidly declining. Both mistresses and servants find, by experience, that a bargain for such a length of time very often produces disagreements. It is best for all parties that the term hired for should be only one month at a time, with one month's notice for separation. By this plan a servant can leave a place which does not please her without any lengthened delay; and in the same way a mistress can give a servant warning to quit at a short notice, should it be found that she is unsuitable. In this manner there is no vexatious obligation to keep together, and a separation can always take place amicably. All servants and mistresses who try this plan find it so agreeable, that they never like to change it. Many servants remain years in a place, though hired on the understanding that it is only from month to month, or, what is the same thing, hired for no fixed period, but just so long as both parties agree; and that, in the event of any dissatisfaction, there shall be a week or a month's warning given on either side. This practice has been long common in London, and the sooner it becomes universal the better.

It is a very old remark, that good mistresses make good servants; and though not strictly correct in all instances, there is, on the whole, much truth in it. A good mistress endeavours to seek out and attach a good servant to herself. She effects this attachment and good-will by simply laying before the servant what is to be her line of duties, or what is expected of her, and then leaving her, undisturbed, to execute these duties in a regular methodic manner. No servant likes to be interfered with in her work, or to be called away from one thing to do another; nevertheless, some mistresses are not happy unless they are going in and out of the kitchen, or bustling up and down the house, ordering and counter-ordering, or in some other way worrying the servant out of all patient endurance. Mistresses of this fidgetty turn can hardly expect to keep good servants, should they be so fortunate as to procure them. We advise the young housewife to commence on the wise plan of prescribing to her servants, in simple, plain terms, the duties which she expects they will daily and regularly execute; and if the servants are unfit to take advantage of this friendly and liberal arrangement, and require to be continually urged and 'spoken to,' it is better for both that there should be a separation. Where two or more servants are engaged, it is absolutely necessary that the precise duties of each should be expressly defined, in order to prevent disputes between them, and that the work of the house may be duly performed.

As much misapprehension prevails, and some annoyance has been experienced by parties, on the subject of *giving characters to servants*, it may not be without its use to mention, in accordance with our best legal authorities, that the character to be given of a servant must accord with the strict truth. If a false *good* character be given, and the servant afterwards rob her master or mistress, the person who gave such false character is liable to an action, and to compensate for the entire loss; and is also liable to punishment, in case of false character, by the statute 32 Geo. III. chap. 86. For the protection of masters and mistresses, it has been legally decided that they are not obliged to give a discharged servant any character, and no action is sustainable for refusing to do so. Where a servant has proved unfaithful, the safest and best course to adopt is, for the master or mistress to decline answering any inquiries on the subject.

CLEANING AND POLISHING.

The best way to clean a house is to *keep it clean* by a daily attention to small things, and not allow it to get into such a state of dirtiness and disorder as to require great and periodical cleanings. Some mistresses, and also some servants, seem to have an idea that a house should undergo 'regular cleanings,' or great washing and scrubbing matches, once every three or six months, on which occasions the house is turned almost inside out, and made most uncomfortable. All this is bad economy, and indicates general slovenliness of habits.

Wooden Floors, if kept in order by daily sweeping and other small attentions, may be effectually cleaned by washing them with warm water and soap; but if spots of grease are to be removed, the spots must previously be taken out with fullers'-earth. Ink spots may be discharged with spirits of salt. Some mistresses make a practice of ordering the floors of bedrooms to be frequently washed. We wish to guard both mistresses and servants against this practice. It is most dangerous to the health of the person who occupies the bedroom to wash or scour it, unless the weather be very fine or warm, in order to allow the window to be opened for thoroughly drying the room before night. The utmost that should be done, except in favourable circumstances, is to pass a damp mop lightly over the floor.

Carpets.—Ordinary Kidderminster carpets can only be cleaned by shaking and beating; if cleaned by means of washing, they become so soft, as to be speedily dirtied again, and their appearance is spoiled. Brussels carpets may be cleaned as follows:—Take them up and shake and beat them, so as to render them perfectly free from dust. Have the floor thoroughly scoured and dry, and nail the carpet firmly down upon it. Take a pailful of clean cold spring water, and put into it about three gills of ox-gall. Take another pail with clean cold water only. Now rub with a soft scrubbing-brush some of the oxgall water on the carpet, which will raise a lather. When a convenient-sized portion is done, wash the lather off with a clean linen cloth dipped in the clean water. Let this water be changed frequently. When all the lather has disappeared, rub the part with a clean dry cloth. After all is done, open the window, to allow the carpet to dry. A carpet treated in this manner will be greatly refreshed in colour, particularly the greens. It is very advisable, in laying down carpets at first, to cover the floor beneath them (especially if an old floor) with large sheets or webs of paper, so as to prevent dust from rising between the boards. A carpet lasts longer by adopting this precaution.

Oil-Cloths.—Oil or painted cloths should be laid only on dry floors; if the floor be in the least degree damp, the cloth will soon mildew and rot. Such cloths, laid even in the driest situation, should be wetted as little as possible. When to be cleaned, they should be wiped with a wet cloth, and rubbed gently till dry. The rubber should be frequently shaken, to free it from sand or gritty particles, which irrecoverably injure the lustre or varnish of the cloth.

Marble Hearths and Chimney-pieces may be cleaned as follows:—Mix a gill of soap-lees, half a gill of turpentine, and a bullock's gall, and make them into a paste with pipeclay, which lay upon the marble, and let it remain a day or two, then rub it off, and the stains will have disappeared, unless they are of long standing, when the paste must be again applied. Polished marble requires careful treatment, as any acid will destroy the polish. In general, warm water and soap will be found the safest thing for cleaning chimney-pieces of this description.

Walls of Houses.—The outer surfaces of walls, formed of brick or sandstone, sometimes imbibe moisture from the atmosphere, and this gives a dampness to the interior. If it be found unsuitable to plaster, rough-cast, or whitewash the outside, the damp may be greatly prevented by painting the walls with a single coat of oil-paint, which, by being light in colour, will give a neat and clean effect. An ashlar or hewn front may

be well preserved by a coating of hot linseed-oil, mixed with a small proportion of colour, so as to preserve the natural hue of the stone. For further information on the subject of wall-plasters, cements, and stuccoes, the reader is referred to Vol. I., p. 333.

Walls of Rooms.—When walls of rooms or staircases are to be painted in oil, let the paint be of the best description. It is not unusual for inferior tradesmen to use whiting, instead of white lead, as a pigment; by this deception the paint will afterwards scarcely endure washing. Supposing, however, that the paint has been of the best kind, considerable care will be required in cleaning it. The safest and most simple plan is, to take a pail of hot water, and put into it as much common yellow or soft soap as will raise a lather or froth. Now wash the walls well with a flannel cloth dipped in this water; then wash this soapy water off with clean flannel and clean warm water. Dry with a clean linen cloth. Do all this equally, so as not to leave smears, or parts better washed or wiped than others. If soda or potash be added to the water, it destroys the varnish or gloss of the oil-paint, and gives it the appearance of flat-painting, or painting in distemper.

Paper-Hanging should be first dusted, and then cleaned by a stale loaf of bread, with the crumb surface cut smoothly, and gently rubbed, the dirty face of the bread being cut away from time to time. The imitative marble-paper, highly varnished, may be washed with cold water and soap. *Papier-mâché*, now much used for mouldings and ornaments in rooms, may be cleaned with soap and water.

Picture-Frames of varnished or French-polished wood may be washed with soap and warm water, and sponge or flannel. As already mentioned, frames which are gilt in the ordinary manner, or 'water-gilt,' cannot endure washing or rubbing; but if 'oil-gilt,' they may be washed with cold water and a soft brush.

Ivory may be restored to its original whiteness by cleaning it with a paste of burnt pumicestone and water, and then placing it under glasses in the sun's rays. Some attempt the use of diluted acids, but this requires extreme caution and expertness.

Brass inlaid Work is best cleaned as follows:—Mix tripoli and linseed-oil, and dip into it a rubber of hat, with which polish the work. If the wood be ebony or rosewood, polish it with a little finely-powdered elder-ashes; or make a paste of rottenstone, a little starch, sweet-oil, and oxalic acid, mixed with water. The ornaments of a French clock are, however, best cleaned with bread-crumb, carefully rubbed, so as not to spoil the woodwork. Ormolu candlesticks and lamps may be cleaned with soap and water. They will bear more cleaning than lackered articles, which are spoiled by frequent rubbing, or by acids, or strong alkalies.

Windows and Looking-Glasses.—Dip a moistened rag or flannel into indigo, fullers'-earth, ashes, or rottenstone, in impalpable powder, with which smear the glass, and wipe off with a dry soft cloth. Powder-blue or whiting, tied up in muslin, and dusted upon the glass, and cleaned off with chamois leather, also gives glass a fine polish. The spots in the silvering of old looking-glasses are caused by damp at the back. The Vauxhall plates are no longer prized, for the glass made in the present day is *whiter* and better. Window-panes may be made to resemble ground-glass by daubing them with putty, or a brush with a little thin paste.

Brass and Copper are best cleaned with sweet-oil and tripoli, powdered Bath-brick, rottenstone, or red brick-dust, rubbed on with flannel, and polished with leather. A strong solution of oxalic acid in water gives brass a fine colour. Vitriol and spirits of salts soon make brass and copper very bright, but they very soon tarnish, and consequently require more frequent cleaning. A strong lye of roche-alum and water will also improve brass.

Stove-Grates are cleaned with black-lead mixed with turpentine, or with stale beer and yellow soap, and polished off. The finer lead is used dry, in lump or powder. The bronzed work of stoves should be only lightly brushed. Rottenstone, or fine emery and sweet-oil, is used for the bright work of stoves and polished fire-irons; the higher the latter are polished, the less likely are they to rust. To prevent rust in articles not often used, rub them with sweet-oil, and dust over them fine lime; or with the following mixture:—To a quart of cold water add half a pound of quicklime; let it stand until the top is clear, when pour off the liquid, and stir up with it some olive-oil, until it becomes of a pasty consistence, when it should be rubbed on the metal articles to be preserved. To fill cracks in stove-backs, make a paste of wood-ashes, salt, and water. To remove rust, mix tripoli, sulphur, and sweet-oil, and clean the articles with it; or mix boiled soft soap with emery No. 3, which will also discharge the fire-marks from bright bars. Steel-work may also be kept from rust by varnishing it with turpentine in which is dissolved a small proportion of India-rubber (caoutchouc). Polished fire-irons may be best preserved from rust by being closely wrapped up in strong brown paper.

Kitchen Vessels.—The crust on boilers and kettles, arising from the hard water boiled in them, may be prevented by keeping in the vessel a marble, or a potato tied in a piece of linen. Tin-plate vessels are cleanly and convenient, but unless dried after washing, will soon rust in holes. Iron coal-scoops are liable to rust from the damp of the coals. The tinning of copper saucepans must be kept perfectly clean and dry, in which case they may be used with safety. Copper pans, if put away damp, or a boiling-copper, if left wet, will become coated with poisonous crust, or verdigris. Untinned copper or brass vessels, even if scoured bright and clean, are always dangerous. If made dishes be allowed to cool and stand for some time in copper vessels, the articles will become poisonous. In the year 1837, a lady and her family, residing in Paris, were poisoned by partaking of a stew which had been allowed to stand and get cold in a copper pan. A German saucepan is best for boiling milk in. This is an iron saucepan, glazed with white earthenware instead of being tinned, the glaze preventing its tendency to burn. A stewpan made like it is also preferable to a copper pan, since simple washing keeps it sweet and clean. A method of glazing saucepans with earthenware is now common in this country. Zinc sieves are more easily kept clean than those made of hair, will last longer, and not rust.

Dish-covers are cleaned with fine whiting and sweet oil, and polished with dry whiting powder. Britannia-metal teapots, &c. should be rubbed with sweet-oil on flannel, then polished by the hand with rottenstone, and next washed with soap and hot water, and finished with wash-leather and whiting powder. Pewter is scoured with fine white sand and a lye made with wood-ashes, or soda and water. A useful paste for tins, brasses, and the like, is composed of rottenstone, soft soap, and oil of turpentine. The stone must be powdered, and sifted through a muslin or hair-sieve; mix with it as much soft soap as will bring it to the consistency of putty; to about half a pound of this add two ounces of oil of turpentine. It may be made up in balls or put in gallipots; it will soon become hard, and keep any length of time. The articles to be polished should be first freed from grease and dirt; after which, moisten a little of the paste with water, smear it over the metal, then rub briskly with dry rag or wash-leather, and it will soon bear a beautiful polish.

Knives are best cleaned by rubbing on a flat board, on which is put finely-powdered brick-dust. Some recommend leather to be put on the board; this may prevent the knives from wearing, but it is apt to deprive them of an edge fit for cutting. Never put knives in hot water, for that loosens the handles, and spoils the temper of the steel. For simple cleaning after use, wipe them only with a damp, and then with a dry cloth. Machines for cleaning knives by the dozen are common in hotels; but as they all act upon the principle of rapid friction, they are by no means suited to the economical wants of a household.

Lamps.—When lamps are foul inside, they should be cleaned with hot water and pearl-ash, and well rinsed, and set by the fire to dry before the oil is again put in. Spirit-lamps should be filled with great care, lest the spirits take fire; and unless the spirits of wine be pure, it will not burn. Naphtha, which is burnt in some lamps, is so inflammable as to be dangerous.

Lamp-Glasses.—If the lamp-glasses be ground, burnt spots upon them cannot be removed; but they may be cleaned from the effects of smoke by washing with soap and water, and then rubbed with a dry cloth. The glasses should always be ground on the outside.

Furniture.—Mahogany furniture is always best cleaned by continual rubbing; and no ordinary stuff that may be applied will compensate the want of this requisite. Some furniture is what is called 'French polished;' but this French polish is an unguent possessed and applied only by cabinet-makers, and cannot readily be had by housekeepers. In ordinary circumstances, therefore, the furniture must be well rubbed, and with some easily-procurable material. The following are the materials we suggest:—Take a gill and a-half of unboiled linseed-oil, one gill of turpentine, and a teaspoonful of pounded loaf-sugar. Shake all well together, and rub a portion on the furniture with a piece of flannel, and polish with a linen cloth.

An oil for darkening furniture may be made as follows:—Mix in one pint of linseed-oil an ounce of powdered rose-pink, to which add one ounce of alkanet root, beaten in a metal mortar; let the mixture stand in a warm place for a few days, when the substances will have settled, and the oil, of a deep rich colour, may be poured off for use: or mix one ounce of alkanet root, four ounces of shell-lac varnish, two ounces of turpentine, and the same quantity of scraped bees'-wax, with a pint of linseed-oil; and when they have stood a week, the mixture will be ready for use.

Furniture-paste is made by scraping a quarter of a pound of bees'-wax into half a pint of turpentine, and letting it stand to dissolve. This will keep the wood light. If, however, a quarter of a pint of linseed-oil be added to the above, the composition will darken the wood. Another paste, useful for very light wood, is made as follows:—In a quart of hot water dissolve six ounces of pearl-ash, add a quarter of a pound of white wax, and simmer the whole for half an hour in a pipkin; take it off the fire, and when it has cooled, the wax will float upon the surface, and should be worked in a mortar, with a little hot water, into a soft paste. With this furniture may be highly polished, as may also marble chimney-pieces. It is necessary to mention that furniture cleaned with paste has the disadvantage of receiving heat-marks more readily than if polished with linseed-oil, which, however, requires more time and labour. In any case, the furniture should be cleansed from grease and stains before polishing is attempted; and this may be done by washing the wood with hot beer, or with soap and water. The safest way to heat furniture-paste or oil is, to place the vessel containing it in another holding boiling water upon the fire, in the manner of a glue-pot.

A fine varnish for mahogany or other furniture may be thus made:—Put into a bottle two ounces of gum-sandrac, one ounce of shell-lac, half an ounce of mastic, half an ounce of gum-benjamin, one ounce of Venice turpentine, and a pint of spirits of wine. Colour red with dragon's blood, or yellow with saffron. Let it stand in a warm place until the gums are dissolved, when strain it for use.

To extract Ink from Mahogany.—Dilute half a teaspoonful of oil of vitriol with a large spoonful of water, and apply it to the ink spot with a feather: let it lie for a few minutes, and rub it off quickly; and repeat if not quite removed. This receipt of course is only applicable to plain mahogany; the sulphuric acid or oil of vitriol would destroy any varnish, such as French polish, upon which it might be laid.

Varnishing.—Before new furniture is varnished, it should have a coat of boiled oil (if wished to be darkened) or linseed-oil, and be left a day or two to harden; or a thin size, made from isinglas or gum-tragacanth, dissolved in water, or very thin glue, is used; so that the pores of the wood be filled up, and both varnish and time be thus saved. A good varnish may be made by dissolving eight ounces of white wax and half an ounce of yellow rosin in a pint of spirits of turpentine.

Bottles.—Cut a raw potato into small pieces, and put them in the bottle along with a tablespoonful of salt, and two tablespoonfuls of water. Shake all well together in the bottle till every mark is removed, and rinse with clean water. This will remove stains of wine, green marks of vegetation, and other discolourations. Hard crust in bottles may be cleaned off by rinsing with water and small shot. Take care to wash out all the shot before putting the bottles aside.

Plate.—Articles of plate, after being used, should be washed in hot water; or, if stained, they should be boiled, and rinsed and dried before you attempt to clean them. They should be carefully handled, else they may receive deep scratches, which are very difficult to remove. Besides, the object is not merely to clean the plate, but to polish it, so that it may appear almost as brilliant as when it was received new from the silversmith. For this purpose quicksilver was formerly much used in plate-powder, and it gave the silver great lustre, which soon, however, disappeared, and the article became tarnished and blackened. The best plate-powder consists of dried and finely-sifted whiting or chalk. The greater part of the whiting sold in the shops is coarse trash, unfit for rubbing upon plate, and great care must be taken to procure the finest London whiting, which will not scratch.

Brushes, hard and soft, sponge, and wash-leather, are requisite for cleaning plate: if the powder be mixed with spirits of wine laid on with a sponge, and rubbed off with wash-leather, all tarnish will be removed. Salt stains (blackish spots) and sulphur marks from eggs are more difficult to remove. It is a good plan to boil a soft fine old cloth in water with some prepared chalk dissolved in it, and to dry the cloth, and use it for polishing. The soft brush is for the same purpose, the hard brush being for chased work, edges, and crests, so that not a portion of dry powder may remain in them. Plate should in all cases be finished with a fine dry wash-leather. Plated articles should be carefully wiped dry after washing them, else they will rust or canker at the edges, where the silver first wears off; and on this account also they should be cleaned as rarely as possible. German silver may be cleaned in the same manner as plate.

Embroidery and Gold-Lace should be cleaned only with spirits of wine, or brushed with finely-powdered roche-alum and chalk. For gold chains, dissolve three ounces of sal-ammoniac in six ounces of water, in which boil the chain; then boil it in soft soap and water, wash it in cold water, rub it dry with flannel, and shake it in a bag with very dry bran.

Flannel or Woollen Articles.—Wash them quickly in moderately-warm water with soap. Wring and shake them well, and hang them up to dry. Do not let them lie wet. The more quickly they are dried, the less likely are they to shrink.

Silks.—No silks look well after washing, however carefully it be done, and should therefore never be resorted to but from absolute necessity. We have seen it recommended to sponge faded silks with warm water and soap, then to rub them with a dry cloth on a flat board, after which to iron them on the inside with a smoothing iron. Sponging with spirits will also improve old black silks. The ironing may be done on the right side, with thin paper or muslin spread over them, to prevent glazing.

The Colour of a Print Dress may be preserved by separating the body and train, and washing in cold rain or river water, into which a handful of salt has been thrown. Instead of spreading the dress to dry, it should be rolled in a coarse cloth, and allowed to remain till dry enough to be ironed.

Bed Feathers.—Put a manageable quantity into a pillow case or bag, which wash with warm water and soap. Wring out the lather, and rinse them in clean water. Wring them as dry as possible, and hang them up to dry. Shake them frequently while drying. When quite dry, beat them, to free them from any dust. The feathers may be now taken from the bag, and are ready for use.

Lace.—When lace has lost its colour, soap it well, and put it in cold water, just enough to cover it. If much discoloured, change the water at the end of twenty-four hours. When steeped sufficiently, rinse it out; starch it a little; pick it out as evenly as possible; roll it in a towel, and when nearly dry, iron it. All lace veils may be treated in a similar manner.

Scarlet Cloth.—Pour boiling water upon bran, strain it, and, while hot, wash the cloth in it, and rinse with hot water. Soap should not be used. Purple cloth may be washed in hot water and pure lye. Saxony or dark-print dresses should be washed in two lathers, and in the second should be poured a little ox-gall, which will freshen reds, blacks, and greens; and a handful of salt added to the last rinsing-water will prevent the colours running.

Clear Starching is practised as follows:—Rinse the articles in three waters, dry them, and dip them in a thick starch, previously strained through muslin; squeeze them, shake them gently, and again hang them up to dry; and when dry, dip them twice or thrice in clear water, squeeze them, spread them on a linen cloth, roll them up in it, and let them lie an hour before ironing them. Some persons put sugar into the starch, to prevent it sticking while ironing; and others stir the starch with a candle, to effect the same end; we object to these practices as injurious to the article starched, or as very nauseous. The best plan to prevent sticking is to make the starch well, and to have the irons quite clean and highly polished.

Stains.—Stains of fruit or wine may be generally removed from linen or cotton cloth by placing the articles over the top of a pail, and pouring boiling water through them till the marks disappear.

Ink Marks or Iron Moulds may be removed by placing a plate (a pewter one is the best) on the top of a basinful of boiling water; then spread the articles on the plate; wet the spot, and rub it with a small quantity of the salts of lemon; as the article dries, the stain will disappear. If this fail, repeat the operation. A small box of salts of lemon will be found very useful in a household. *Mildew* may be removed from linen by the following process:—Rub the cloth well with soap; then scrape some fine chalk, and rub it also on the stained part. Lay the linen on the grass, and, as it dries, wet it a little; the mildew will be removed by one or two applications at most.

Paint or Grease Spots may be removed from woollen cloth by turpentine. Smith's scouring drops is a liquid sold in small bottles, which will also be found efficacious in removing oil or grease marks; it is more expensive than turpentine, but has a less offensive odour.

To extract Grease from Silk.—As soon after the discovery of the injury as possible, hold the part firmly, and with a clean soft white cloth, or an old cambric handkerchief, rub the spot briskly, changing the portions of the handkerchief frequently, and in a minute or two the spot will disappear. On silks which fray easily, this plan will be unsuitable.

DESTROYING VERMIN.

The best plan for preventing the attacks of vermin in houses is to keep the house scrupulously clean; for where there is cleanliness and ordinary precautions, no vermin will generate or exist.

Rats and Mice.—These might in most instances be completely prevented from encroaching in dwellings by giving a solid foundation to the house, cutting off the approach by grating the drains, but especially by filling up all open spaces beneath pavements and in walls and partitions. Mice might be effectually kept out by only filling up the spaces behind skirting-boards in rooms. These vacant spaces are invariably the habitations of mice; and the first thing any person should do in entering into possession of a domicile, is to cause all the spaces behind the skirting-boards and wainscots to be filled with plaster. Where mice and rats have gained a footing in a house, they should be taken off by a cat or trap, and when one kind of trap fails, another may be tried. All schemes for poisoning them with arsenic or other ingredients are dangerous; and even were they not so, the animals, having partaken, may retire to their holes, and dying there, cause an intolerable stench. The following method, which is said to be effectual, is free from these objections:—Take oil of amber and ox-gall in equal parts, add to them oatmeal or flour sufficient to form a paste, which divide into little balls, and lay them in the middle of the infested apartment. Surround the balls with a number of vessels filled with water—the smell of the oil is sure to attract the rats, they will greedily devour the balls, and becoming intolerably thirsty, will drink till they die on the spot.

Bugs.—These pests exist only in dirty houses. A careful housewife or servant will soon completely destroy them. The surest method of destruction is to catch them individually when they attack the person in bed. When their bite is felt, instantly rise and light a candle, and capture them. This may be troublesome, but if there be not a great number, a few nights will finish them. When there is a large number, and they have gained a lodgment in the timbers, take the bed in pieces, and fill in all the apertures and joints with a mixture of lime and soft soap. A piece of wickerwork called a bug-trap, placed at the head of the bed, forms a receptacle for them, and then they may be daily caught till no more are left. Fumigations are very dangerous, and rarely effectual; therefore attempt no such project. Oil-painting a wall is a sure means of excluding and destroying them. The following extirpating mixture is given on high authority:—Spirits of wine, half a pint; spirits of turpentine, half a pint; crude sal-ammoniac, half an ounce; corrosive sublimate, one ounce; camphor, one ounce. This mixture should be inserted into the joints of bedsteads, &c. with a syringe, and with a sponge fastened to a stick: every part of the wood-work must be washed with it. Many bug-poisons, in fact, are to be had at the chemists; but it is not only unpleasant, but dangerous to have such mixtures about a house: and, after all, they are really less effective than unremitting cleanliness. As means are taken to destroy, so means ought to be taken to *prevent* the introduction of these pests, which are often brought from one house to another in clothes, in old furniture, travelling-bags, books from libraries, servants' chests, and even in the old cut-wood sold for kindling fires.

Fleas.—There is no way of ridding a bed or house of these vermin but excessive cleanliness. Keep the floors well swept and washed, and if you have a dog, comb and wash it frequently. Fleas are bred on the ground, or among dust; and it has been said that to destroy one in March or early spring is destroying hundreds.

Lice are now almost unknown in England. Wherever they are found, there certainly also is found dirtiness. Ignorant people imagine that these nauseous vermin breed spontaneously: this is a gross error. By cleanliness they are completely prevented; and the warmer the climate, so is the necessity for cleanliness greater.

Beetles, Cockroaches, and Crickets.—These may be caught in traps, without the disagreeable and dangerous expedients of poisoning or fumigation. A simple trap for them is a glazed basin or pie-dish half-filled with sweetened beer or milk, and to the edge of which a piece of wood is laid from the floor as a gangway. 'I took a water ewer,' writes a seafaring friend whose cabin was infested with cockroaches, 'and baited it with a little treacle on its bottom—for of all sweets, and this in particular, they are exceedingly fond; and attracted by it during the night, they dropped in to

satisfy their appetite. Once in, they could not clamber up the steep smooth sides of the vessel, and in this manner I had it filled, night after night, within two inches of the brim.'

Flies.—It is difficult to rid a house of flies by any other plan than poisoning, and that is too dangerous to be recommended. A composition of milk, sugar, and pepper will attract and kill them, and so will a decoction of quassia sweetened with sugar; but both cause them to make offensive marks on the walls and furniture before they die. Gilt frames and chandeliers should be shrouded in thin yellow gauze or paper, in situations where the flies are likely to spoil them. Trees near a house form a harbour for flies, as well as dirt and offensive odours of all kinds. Cleanliness and airiness are the best preventives.

Moths.—The best way to preserve furs or worsteds from moths is to sew them closely up in a bag of new unwashed linen; if this be not done, the next best is to take the articles frequently out and brush and air them. The odour of camphor, shavings of Russia leather, lavender, &c., are much less efficacious than they are supposed to be. Kill every flying moth which you see.

Slugs.—Take a quantity of cabbage leaves, and either put them into a warm oven, or hold them before a fire till they are quite soft; then rub them with unsalted butter, or any kind of fresh dripping, and lay them in the places infested with slugs. In a few hours the leaves will be found covered with snails and slugs, which may then be destroyed in any way you think fit.

ESCAPES FROM BURNING, &c.

Precautions as to Fire.—Houses are said to take fire by accidents; but these accidents are in general only acts of carelessness, and could, with a reasonable degree of prudence, be avoided. As prevention is better than cure, we offer the following advices:—

Never leave a candle burning at your bedside, or on a table when you go to bed, except it be a rush, wax, or floating light, burning in a basin at a considerable distance from the bed or window curtains. The best place for setting the light is on the hearth.

Never put hot cinders or ashes into a bucket to set aside in a closet.

If you light candles with pieces of paper, take care that the burning paper is completely trampled out after being used. It is always safest to light candles and lamps with a small wax taper, which can be at once blown out. In large manufactories, where there are many lamps or gas-burners to light, let the lighting apparatus be a small hand-lamp, which shall be in charge of a particular person in the premises.

Never blow gas lights out; always turn them off; and turn off the gas at the main stopcock at the door. Should the gas from any cause have escaped, and the smell be suddenly and offensively felt, at once turn off the supply at the meter or stopcock, and open the windows to allow the entrance of fresh air. Be careful not to take a lighted candle into the apartment where the escape has taken place.

Cause the chimneys to be swept once in three months, or oftener if necessary, so as to prevent the accumulated soot from catching fire. Sometimes houses are set on fire from beams which encroach upon the chimneys. House builders ought to be particularly cautious in preventing any part of the woodwork from coming in contact with the flues.

The following are advices how to act when the catastrophe of fire actually takes place:—

Chimney on Fire.—To extinguish speedily the fire in a chimney, it is only necessary to hang over the fireplace a piece of wet carpet or blanket: some handfuls of salt thrown into the fire at the same time will greatly aid the extinction. It is also recommended to scatter a handful of flowers of sulphur over the dullest part of the burning coals, the mephetic vapours arising from which will not support combustion, and consequently extinguish the flames. Throwing water down from the top is a clumsy expedient, by which much damage is frequently done to furniture; so also is stopping at the top, by which the smoke and suffocating smell of the burning soot is driven into the apartment. If every fireplace were provided with a damper, or shutter of sheet-iron, sufficiently large to choke it thoroughly, fire in chimneys would become of little consequence, as it would only be necessary to apply this damper to extinguish them. All good modern grates are furnished with such dampers. To set chimneys on fire with a view to clean them is highly objectionable, even where there is no danger of fire to be apprehended, as the intense heat produced rends and weakens the walls.

Clothes catching Fire.—The moment you see that your clothes are on fire, remain still and collected; do not, on any account, run away in a fright. If there be a loose rug, carpet, or table-cover at hand, snatch it up and roll it tightly about you. If you can get this done smartly, the flames will immediately be extinguished. Should no cloth of any kind be at hand, and no one be present to give assistance, lay yourself down on the floor, and try to extinguish the flames by rolling yourself about, always taking care to keep the garments as close together as possible. If a man be present, let him take off his coat and wrap it round you; and if a woman, her shawl will answer the same purpose. By one or other means, such as are here pointed out, the fire will be stifled, and perhaps the only personal injury will be some slight scorching of the hands, which must not be regarded in averting an infinitely greater evil.

[For remedial applications in the event of injuries from fire—as burns, scalds, &c.—see HOUSEHOLD SURGERY, Vol. I. page 764.]

House on Fire.—In making way through a burning house, we ought not, if it be full of smoke, to walk upright, for then we shall run the risk of suffocation. It is best to creep along on hands and knees, the freest air being to be had close to the floor. On being awakened by an alarm of fire during the night, it is particularly important to preserve presence of mind, and not to act till a moment has been taken for reflection. Preservation may depend on the choice we make of going *up* or *down* stairs, or on some selection of movement equally unimportant in ordinary circumstances of non-alarm.

Fire-Escapes.—The escape from a house which is on fire is sometimes prevented by the stairs being of wood, and either burning or already destroyed. In such an emergency, there are only two means of escape—issuing by the skylight, and so reaching the next house, or going over the window. On this account every house with wooden stairs should have a skylight, accessible from the upper floors, and also some kind of apparatus for getting safely from the windows to the ground. The apparatus which meets with most general approbation is a rope-ladder, and this may be made in different forms. Captain Manby recommends 'a rope with nooses, distended by flat rests for the feet at convenient distances for stepping from one to another. In cases of danger, this might be instantly fastened by one end to a table or bed-post, while the other is thrown out of the window, thus furnishing a ready escape when perhaps there is no other possible means near those who are in momentary dread of being burnt to death.' Such a ladder may be serviceably kept by private parties; and we should advise that at all events every house with wooden stairs ought to be provided with one or more pieces of knotted rope, and these be deposited in the bedrooms, for use when suddenly required. Where, from carelessness, no fire-escape of this kind has been provided, two or more sheets or blankets taken from the bed may be tied to each other by the corners, and thus a rope of sheet be formed. There is no instance on record of a person being burnt to death in Edinburgh by fires in dwellinghouses, although the buildings are more than usually high; the reason of which is, that there the stairs are all of stone. Every fire-establishment in towns, besides fire-engines and buckets, should possess several long ladders, ready at all times to be applied to windows: also cords,

which may be brought to bear wherever they are required. Portable ladders on the telescope principle are now not uncommon in our large towns.

Ventilation and Fumigation.—It is essential to health that the habitations occupied by us should be free of impure air and all noxious vapours. The first step towards this end is to effect and maintain a liberal circulation of fresh air, either by ventilators or by regularly opening the windows for stated daily periods. The kindling of fires also promotes the circulation of atmospheric currents. Noxious effluvia may be most effectually removed by occasional sprinklings of a solution of chloride of lime upon the floors and walls, the windows being kept open the while. It is always proper also that an infected house should be whitewashed. We have seen recommendations to purify the air of rooms by closing them, and burning salt and oil of vitriol in a dish placed on the floor. In unskilful hands such plans are highly dangerous; and we strongly advise every one to confine the fumigating process to sprinkling with chloride of lime, and to ventilate by opening all outlets to the air. Lives are sometimes lost by sleeping in a close room in which charcoal is burning, the person in this case being stifled with noxious gas. We advise that every sleeping apartment should be airy, and that no one should go to bed with charcoal burning in the grate or stove. Bedrooms are always best without fires of any kind.

Disinfectants and Deodorisers.—These, as their names import, are agents employed to destroy noxious and offensive effluvia. The principal, according to Mr Cooley, 'are chlorine, the chlorides of lime and soda, the fumes of nitrous and nitric acids, heat and ventilation. The last two are the most efficient and easily applied. The clothing, bedding, &c. of patients labouring under contagious diseases may be effectually disinfected by exposure to a temperature of about that of boiling water. Neither the texture nor colour of textile fabrics are injured even by a heat of 250 degrees Fahrenheit. It is a practice at some of the workhouses to bake the clothes of the paupers who have the itch, or are infested with vermin. Quicklime rapidly absorbs carbonic acid, sulphuretted hydrogen, and several other noxious gases, and is therefore commonly used as a wash for the walls of buildings. Acetic acid, camphor, fragrant pastiles, cascarilla, and other similar substances, are frequently burnt or volatilised by heat, for the purpose of disguising unpleasant odours. The sulphates of iron and lime have the property of rapidly destroying noxious effluvia. A quantity of either of these sulphates thrown into a cesspool, for instance, will in a few hours remove the fetid smell.'

Alarms in Churches and Theatres.—Alarms, whether with reference to fire or the falling of galleries, often take place in these and similar places of resort. In general they are raised without due cause, often from a circumstance of the most trifling nature, and perhaps occasionally from a deliberate spirit of mischief. However originating, they almost invariably generate a panic, and occasion much damage, which a little reflection would have enabled those present to avoid. The newspapers teem with accounts of incidents of this nature. In most instances the whole mischief is caused by *yielding too easily to alarm.* We anxiously recommend every one to cultivate the power of suppressing such idle emotions. When a cry of fire, or of the falling of galleries, is raised in church, *sit still,* and remain tranquil till the assemblage is allowed to disperse in the usual way. On no account yield to alarm. Granting that there is a real cause of danger, you are infinitely more safe sitting still than trying to rush wildly to the door.

Attacks of Madmen.—A person in a house may become suddenly insane, and make a violent and deadly attack on those within reach. The best way to avert any serious calamity in cases of such attack is to remain calm and collected, and, if necessary, humour the madman till assistance be procured. A lady of our acquaintance kept a boarding-house, and one day a boarder entered the room in which she was sitting, armed with a carving-knife, and with great coolness said he had taken a fancy to cut off her head. The lady was alone. She saw her extreme danger, but did not scream or appear alarmed, for that would have precipitated the catastrophe. She humoured the madman, and proposed that she should go and fetch a cloth to lay on the floor, so as to prevent the blood from damaging the carpet. This bait took, and she got safely out of the room, and into her bed-chamber, in which there was a key in the door in the inside. She instantly locked the door, and flying to the window, cried for help to the passengers in the street. The madman was speedily secured. In this instance the lady clearly owed her life to presence of mind.

We would add, *let every door in a house have its key,* and let the key remain in it both night and day. Every night, on going to bed, isolate each room, by locking it, and lock your own door in the inside. Always look beneath the bed and into any cupboards in the room before going to rest.

Coach Accidents.—Should the horses run off, in defiance of all restraint, while you are in a coach, sit perfectly still; and in anticipation of the possible overturn, keep your legs and arms from straggling. Sit easily and compactly, so that, when upset, you will gently roll over in the direction you are thrown. We have seen ladies in these circumstances scream wildly, and throw their arms out of the windows, thus exposing themselves to the chance of broken limbs. If run away with in a gig, either sit still collectedly, or drop out at the back, so as to fall on your hands. Never jump from a rapidly-moving vehicle, unless (supposing it impossible to slip down behind) you see a precipice in front, in which case any risk of personal damage is preferable to remaining still. The Duke of Orleans [son of Louis-Philippe] lost his life by neglecting these simple precautions.

[For further information on the subject of accidents and emergencies consult No. 48, Vol. I.]

MANAGEMENT OF FUEL AND WATER.

To light a Fire, clear the ashes from the grate, leaving a few cinders for a foundation, upon which put a piece of dry crumpled brown paper, and lay on a few small sticks crosswise, then some of larger size, and on them a few pieces of coal, and next the large cinders; and when the flames have caught the coal, add a backing of small coal and cinders. When the fire has become low, stir it together, but do not turn the large cinders; clear the front of the lower bar to admit air, and pass the poker into the bottom of the fire to clear it of ashes; and then with tongs put on a few large pieces of coal towards the front of the fire, but not on the upper bar, else the fire will smoke. Coals should not be thrown on, but put on gently with a scoop or shovel; and even the smallest ashes may be burnt at the back of the fire, if they be covered with small coal. The best and quickest mode of restoring a neglected fire is to stir out the ashes, and with the tongs to fill up the spaces between the bars with cinders. If carefully done, it is surprising how soon this process will produce a glowing fire. A very effective firelighter or reviver, composed of sawdust and coal-tar, is now to be had in the shops for the merest trifle.

Economical Fuel.—In places where coal is scarce and dear, a tolerably good fuel may be made by mixing the culm or refuse dross of coal with clay, and moistening the whole with water—masses in the form of bricks or balls may be made, which, when dry, will burn with an intense heat. Where peat prevails, that article may be easily charred by burning in a covered pit or stove; and this charred peat will be found to give a great heat when used in an open fire. The Dutch make much use of their turf in this manner. Another economical fuel, easily procurable where there are woods of Scotch firs, consists of fir cones or tops, which contain a great quantity of solid woody matter in addition to the resinous, and are excellently adapted for domestic fires. Ashes

and small cinders mixed with water into a mass, and put on the back of a fire with a few coals, burn well, so that ashes may thus be entirely burnt up. In stoves under boilers, this mixture is very useful, as it lasts long, with little addition.

Smoky Chimneys.—The causes of smokiness in chimneys are various; but all are connected with the properties of air and heat, for the smoke is only particles of culm ascending through the agency of heated air. To make a chimney vent well, the column of heated air from the fire must not be entangled with cold air from beneath, nor retarded by cold air coming down the chimney. To effect these objects, the fireplace must not be much larger than the grate, and the chimney must be of a certain length and bent. The great leading cause of smokiness is cold air somehow or other mixing with the warm air about the mouth or throat of the chimney, and so causing a sluggishness in the ascent, or no ascent at all. Therefore the nearer the air is made to pass the fire on all sides, the more rarefied it will be; and the less vacancy there is in the chimney-place, it will ascend with the greater rapidity. A proper contraction of the mouth of the chimney, at the same time allowing the fire to be fed freely with air, will be found in most instances to cure smoke. Of late, certain contrivances called 'dampers,' by which the chimney throat can be narrowed, have been the means of effecting draughts, and so curing smoke. It should be noted, that in contracting chimney throats, the contraction should not be all at once, but at first gradual, and then straight upward, so as not to allow a volume of cold air to lurk in a hollow above. A chimney being wide at bottom, and gradually narrowing towards the next storey, allows the coldish air to hang about the lower parts, by which, when a gust of wind comes, the smoke is driven back into the room. This kind of smokiness is the most teasing of all the forms of chimney diseases. Every little puff of wind sends a smaller or larger quantity of smoke into the apartment, and often when it is least expected. Perhaps this kind of smokiness is not in all cases caused by wrong construction, but arises from the situation of the house; and of this we shall immediately say a few words.

If a funnel of a chimney be made too narrow to afford an easy passage to the top, the smoke will then naturally be forced into the room to find some other passage; this defect is very common, and the remedy troublesome and difficult. The most effectual cure, if the situation will admit, is to build a small additional flue, and open a hole into it from the back of the chimney, near the level of the mantelpiece, slanting upwards in an easy direction; this supplemental flue must be carried to the top of the building, to receive the surplus of the smoke, and will prove a certain cure. If the situation will not allow of this expedient, the fireplace may be contracted both in breadth and height, a smaller grate used, and the chimney heightened at the top; which will oblige the air to pass close over the fire, and carry up the smoke with greater rapidity; for the quicker the current, the less room it requires. Should the chimney still smoke, a blower, or front-plate, to put on and take off at pleasure, will be of use. But if none of these prescriptions answer, then something must be done to improve the current of air towards the fire. This brings us to a consideration of the want of sufficient ventilation in the room.

If the chimney and fireplace be faultless, and yet smoke, it is almost certain that there is a want of ventilation. In ordinary circumstances, as much air is admitted by chinks in windows and doors as will feed a fire; but if the room be rendered very close by closing as many chinks as possible, how is the fire to receive air? According to the plan on which houses are generally built, ventilation is left to be a matter of chance. To ventilate an old house is therefore no easy task. The following plans are worth considering, for they have been found to answer:—Contrive to bring a small tube from the external air, or from a staircase or lobby, to a point beneath the grate, so as to cause a free current of air to reach the fire. If the mouth of the tube below the grate be topped with a cowl, the ashes will be prevented from falling into it. Some years ago, the rooms of a public office in Edinburgh were completely cured of smoke by this simple contrivance, after all other means had failed. Another plan consists in perforating small holes in the cornice or roof, for the air to gain admission; but, unfortunately, unless care be taken to prevent colds, this species of cure is apt to be worse than the disease.

Cases are by no means uncommon of fireplaces giving out a puff of smoke every time the door of the room is shut. The cause of this kind of smokiness is the want of ventilation in the room. In shutting the door, it pulls out a certain quantity of air, which cannot be afforded to be lost, or it causes such distraction of the current towards the fire, that the equilibrium that carries up the smoke is destroyed, and a puff downwards—in other words, a rush of air, loaded with smoke from the chimney—is the consequence. It will be remarked that this smokiness occurs most frequently when the door is on the same side of the room as the fireplace. We should therefore advise house-planners to avoid this bad arrangement. If possible, let the door be on a different side from that in which the fire is placed. Most houses in which the chimneys go up the middle walls instead of the gables, have the fault we mention. A remedy for this smokiness is to contract the mouth of the chimney, and, if possible, heighten the stalk; for if the chimney be pretty long, the heated air ascending it goes with such a force that the outer heavy air cannot get down, at least not to so great an extent as to cause a puff when the door is shutting. In some cases the cause of the disease will be found to be air rushing up behind the grate, if a register, and then coming down to supply the fire, the action of the door disturbing the current. This is therefore an argument for always taking care to build register stoves quite close behind, not leaving the smallest crevice for air to steal up the chimney without first going through the fire.

In erecting chimneys, it should be a rule to carry them up a good way in a perpendicular direction before making a turn, by which means the heated air gains a force in its primary vertical ascent which carries it over future difficulties. In walls in which the fireplace of one storey is immediately below the fireplace above, it is impossible to get a perfect straight for any great length; therefore this must be left to the judgment of the builder. It is also advantageous for all chimneys to have a bend in them before reaching the top, and a garret chimney should have two bends. For want of attention to this top bending, many cottage and small villa chimneys smoke. The use of bends is obvious: strong, sudden, and accidental gusts of wind sometimes enter, and beat into the top of the chimney; a turning or bend, therefore, will break the force of the wind, and prevent it repelling the heated air downwards. But if the chimney is straight, and the gust meet with no interruption, it will stop the passage of the smoke for a while, and of course force what rises from the fire immediately into the chamber. It is to be observed, that the farther the wind gets down the funnel, the greater strength will be required to repel it; therefore the nearer to the top the bend or winding is the better. Also, if there is a storm of wind, with heavy showers of hail, snow, or rain, falling perpendicularly in great drops, the first bend or turning will, in part, stop their progress; but if the funnel is perpendicular all the way down, the great drops of hail, snow, and rain, will fall freely to the bottom, repelling the smoke into the room; and if the funnel is foul, great quantities of soot will be driven down. These considerations recommend a bend in some part of the funnel as absolutely necessary.

Garret chimneys are more liable to smoke than any other in the house, owing to the shortness of the funnel: for when the composition of rarefied air and smoke has made its way up a high funnel, it forms a strong

column, and to repel it requires a proportionably great force; but in a garret chimney this strong column cannot be obtained; therefore what cannot be had from nature must be aimed at by art. The fault in most garret chimneys is, being carried up in a straight direction from bottom to top in a slovenly manner, and with funnels as large as any in the house; whereby the little internal rarefied air has the whole immediate pressure of the atmosphere to resist, which in general is too powerful for it. But a garret or cottage chimney carried up and executed in a proper manner, with due proportion in every part, according to the size of the room, and the funnel in an easy crooked direction, will draw and be as clear from smoke as any other.

When smokiness is produced by too short a chimney, it will be necessary to add to its length either by building the stalk higher, or inserting an earthenware pot or iron tube at the summit. The building of higher stalks is an infallible remedy, provided all be right below; but it is attended with danger to adjoining roofs. Pots or cans are useful both in adding to height, and in causing a free disengagement and shooting of the smoke as soon as it enters the outer atmosphere.

Another very common cause of smokiness is fires overpowering one another. For instance, if there be two chimneys in one large room, and you make fires in both of them, the doors and windows close shut, you will find that the greater and stronger fire shall overpower the weaker, and draw air down its funnel to supply its own demand; which air descending in the weaker funnel, will drive down its smoke, and force it into the room. If, instead of being in one room, the two chimneys are in two different rooms, communicating by a door, the case is the same whenever that door is open. In a very tight house, it has been known that a kitchen chimney on the lowest floor, when it had a great fire in it, has overpowered any other chimney in the house, and drawn air and smoke into its room as often as the door was opened communicating with the staircase. The remedy for this is, to take care that every room in a house has the means of supplying itself with what air it requires, so that it does not need to borrow air from other rooms. Back smoke is only cold air loaded with smoke coming down into a room from an adjoining chimney-top, in order to supply, in the readiest manner, air to that room. Thus fires in the lower part of a house will draw air even from a garret room, and this garret room will draw air to supply its deficiency, by taking it in a smoky condition from the adjoining chimney tops.

Smokiness is also produced when the tops of chimneys are commanded by higher buildings, or by a hill, so that the wind blowing over such eminences falls, like water over a dam, on the tops of the chimneys that lie in its way, and beats down the smoke contained in them. Sometimes we have seen the droll phenomenon—though it is no laughing matter—of every particle of smoke all of a sudden pouring into the room, in consequence of a gust of wind blowing pertinaciously for several minutes down the chimney. Such a form of smokiness arises chiefly from the situation of the house, and the want of a bend in the chimney. The remedy to be applied is fixing on the top of the chimney a turning cap or cowl, which acts like a weathercock, and keeps its closed side to the wind. These cowls, however, are creaking, noisy things; and being hence insufferable near sleeping-rooms, are only to be resorted to when more simple means have proved unavailing.

Supply of Water, whether for dietetic, domestic, or sanitary purposes, has been fully discussed in a previous number (30). The chief care of the housewife is, that she has a sufficient, pure, and wholesome supply of this indispensable element. Where water for domestic purposes is obtained from open streams and pools, caution is always necessary, and especially during summer, when vegetable and animal impurities are most abundant. Pump-wells also require to be looked after, especially if they have stood without being used for a time. Where service-pipes are admitted into a house, care is necessary—*1st*, To see that the stopcocks are always secure, as frequently great damage is occasioned to furniture and ceilings by waste water; *2d*, That cisterns be regularly cleaned, and if of lead, that they be not scoured, but simply sluiced out; and, *3d*, That during severe frosts the stopcocks of exposed pipes be allowed to discharge a little, as the flow of water prevents freezing and consequent bursting of the pipes.

To purify Water, a vast number of means may be adopted, according to the nature of the impurities:—1. Water may be sweetened and improved by free exposure to the air. Pouring it at some height from a watering-pot into a flat vessel will answer this end. 2. Filtration or agitation with freshly-burnt charcoal, animal or vegetable, but especially the former, is an excellent method. 3. From fifteen to twenty drops of sulphuric acid to a gallon of water will produce a similar effect. 4. An ounce or thereby of powdered alum, dissolved and stirred into a hogshead of putrid water, will precipitate the foul matter in a few hours. 5. Red sulphate of iron, black oxide of manganese, or a little aqueous chorine, will produce the same effect. 6. Hard water may be softened by the addition of a solution of carbonate of soda or potash; by the same means sea-water may be rendered fit for washing.

To filter Water.—Put into an earthen vessel (such as sugar-bakers use to form the loaves in, with a small hole at the bottom or pointed end) some pieces of sponge, and on them a sufficient number of small clean pebbles to quarter-fill the vessel. Hang this filter end downward, in a barrel with the head out, leaving a space of about two or three inches between the end of the filter and the bottom of the barrel. The upper part of the filter should be kept a little above the top of the barrel, which must always be kept full of water. The sediment of the water will remain at the bottom of the barrel, and the pure water will rise through the sponge and pebbles to the vacant part of the filter. It may be hung in a cistern, or water-butt if more convenient. The pebbles and sponge should be cleansed occasionally.

Another economical filter may be made by taking out the head of a cask, setting it upright, and at a distance of about one-third from the bottom putting in a shelf or partition pierced with small holes; this shelf being covered with pebbles, upon which is a layer of fresh charcoal made from bones; and over this lay fine sand, to the depth of an inch, covered with another layer of pebbles; and upon this should be placed another shelf, pierced with holes, to prevent the pebbles, sand, and charcoal being disturbed by the water which is poured or runs in at the top of the cask; and after passing through the filter, is drawn off by a crane placed at the bottom of the cask.

Portable and very efficient earthenware filters may be had at the shops, varying in price from 8s. to 30s., according to size and quality. We have used one of Sotheran's No. 2 for several years, and have found it to answer the purpose to perfection. For information respecting filtration on a large scale, see SUPPLY OF WATER, Vol. I., page 472.

Tests for Water.—Mechanical impurities, or such as are suspended in water, may be removed by rest or filtration, as above described; but chemical impurities, or such as are dissolved, pass through the filter, which has no power of separating them. When *lime* in any form is present, oxalic acid or oxalate of ammonia will cause a white precipitate. Carbonate of *iron* may be detected by the tincture of galls, which causes a black precipitate. If *copper* is present, the blade of a penknife dipped in the water will assume a yellowish coating. *Vegetable* and *animal matter* may be detected by sulphuric acid, which blackens the water.

SMALL DOMESTIC MANUFACTURES.

The attempt to make all sorts of articles for domestic use is now far from economical, as the time and expense bestowed upon them are often of greater amount

than what would buy the things ready-made from shops. We therefore confine our directions to articles which may require to be manufactured in families at a great distance from towns, or for the families of emigrants in remote settlements.

Blacking for Shoes.—There are many ways of making this article, the chief ingredients employed being ivory-black, vinegar or sour beer, sugar, a little sweet-oil, and oil of vitriol. A good blacking may be made as follows:—Mix three ounces of ivory-black, two ounces of treacle, a tablespoonful of sweet-oil, one ounce of vitriol, one ounce of gum-arabic dissolved in water, and a pint of vinegar.

For *Blacking-Balls*, mix one pound of ivory-black, one pound of lampblack, a quarter of a pound of gum-arabic dissolved in water, six ounces of brown sugar, half an ounce of melted glue, and a quart of water; and make into balls. A fine blacking for dress-shoes may be made by well beating two eggs, and adding a tablespoonful of spirits of wine, a lump of sugar, and ivory-black to thicken. This blacking may also be used for restoring the black leathern seats and backs of chairs, &c. It should be laid on and polished as other blacking, and then left a day to harden.

Boot-top Liquid.—Dissolve in a quart of water one ounce of oxalic acid, and the same of white vitriol; with which sponge the leather, previously washed with water; then wash off the composition with water, and dry. This mixture is for *white* tops. For *brown*, mix one ounce of oxalic acid, one ounce of spirits of salts, a scruple of cochineal bruised, and a pint of boiling water, and use as above. These mixtures should be labelled 'poison.' For brown tops, also, mix with a pint of skimmed milk half an ounce of spirits of salts, half an ounce of spirits of red lavender, one ounce of gum-arabic dissolved in water, and the juice of two lemons; keep the mixture closely corked, sponge the tops when dry, and polish them with a brush.

Blacking for Harness.—Melt two ounces of mutton-suet with six ounces of bees'-wax; add six ounces of sugar-candy, two ounces of soft soap dissolved in water, and one ounce of indigo finely powdered; and when melted and well mixed, add a gill of turpentine. Lay it on the harness with a sponge, and polish off with a brush.

Paste is useful in a house for papering walls, cupboards, boxes, labelling, &c. A very useful composition of this sort is made of flour in the usual way, but rather thick, with a proportion of brown sugar, and a small quantity of corrosive sublimate. The use of the sugar is to keep it flexible, so as to prevent its scaling off from smooth surfaces; and that of the corrosive sublimate—independently of preserving it from insects—as an effectual check against its fermentation. This salt does not, however, prevent the formation of mouldiness; but a drop or two of oil of lavender, peppermint, or aniseed, is a complete security against this.

Waterproof stuff for Shoes.—In winter, or during wet weather, shoes may be rendered durable by applying to the soles and seams a composition made of the following materials:—Half a pint of unboiled linseed-oil, two tablespoonfuls of turpentine, one ounce of bees'-wax, and a quarter of an ounce of Burgundy pitch. Melt the whole together, and apply with a brush before the fire. Repeat the application till the soles will absorb no more. Neats'-foot oil alone will be found an excellent preservative of shoes in wet weather. Since the introduction of caoutchouc and gutta-percha, waterproof stuff for shoes and goloshes can be readily obtained at the shops, fitted or worked up in the household. Any one may sole his own shoes for a shilling.

Bottle Wax.—A good kind of bottle wax or cement may be cheaply made as follows:—Put into an iron ladle half a pound of rosin, two ounces of bees'-wax, and when melted over the fire, stir in Venetian red, lampblack, or other colouring; and apply while hot. If kept for after-use, melt with a candle, as usual, when applied.

Potato-Starch.—Wash and peel a gallon of good potatoes, grate them into a pail of water, stir frequently, and then let them settle. On the following day the starch will be found at the bottom of the pail; when pour off the water, add fresh, stir as before, and let it subside a second time; when pour off the water, and dry the sediment in the sun or a slow oven. An excellent starch may also be made by settling in a cool place the water in which rice has been boiled (though not in a cloth), which will in twenty-four hours become a strong starch.

Potashes.—Settlers in the backwoods of America, or other woody regions, have an opportunity of manufacturing potashes, an article of great use, and considerable value. A vast quantity of this substance is annually made in Canada, and exported to Great Britain. Potashes are made from the ashes of burnt trees. In burning timber to clear the land, the ashes are carefully preserved, and put in barrels, or other vessels, with holes in the bottom; and water being poured over them, a liquid or alkali is run off. This lye being boiled in large boilers, the watery particles evaporate, and leave what is called black salts, a sort of residuum, which, when heated to a high degree, becomes fused, and finally, when cool, assumes the character of pot-ash. By these potashes the Canadians make their own soap: the lye of a barrel of ashes, boiled along with ten pounds of tallow, till it is of a proper consistence, produces about forty pounds of very good soft soap. It is related, that when the land has been covered with heavy timber of a hard nature, there is such a quantity of ashes produced, that their value is sufficient to pay for the clearing of the land.

Ash-Balls.—This term is applied to the ashes of various plants, especially ferns, moistened, and made into lumps or balls. They are used as a substitute for soap, and to clean painting.

Dyes.—The most simple rule for dyeing is, to put the dye into very hot water, and when well mixed, to pass the stuff through it until it sufficiently imbibes the colour, but on no account to squeeze it: it should then be hung up, and when cold, plunged twice into soft water, and then into hard water with a little alum dissolved in it: the stuff may then be again hung up, and when nearly dry, ironed or pressed. Most colours are made brighter by the addition of a little cream of tartar, and darker by pearl-ash. Dyes may be purchased ready prepared. We would recommend that all ordinary dyeing, and particularly when fancy or delicate colours are required, should be consigned to the hands of the professed dyer; and dyeing of a coarse kind only be done at home. In such cases, *brown* may be produced from a decoction of birch bark; and *black* from logwood with green copperas (see article CHEMISTRY APPLIED TO THE ARTS).

Bleaching small Articles.—The principles and practice of bleaching cotton, linen, and woollen on a large scale have been detailed in Nos. 20 and 22; we here allude to minor articles, which may be whitened in the laundry or kitchen. Silk is bleached by boiling it in white soap and water, to remove the natural yellow varnish which covers it; after which it is subjected to repeated rinsings. Articles that are required to be very white—as gloves, stockings, &c.—are also submitted to the action of sulphurous acid, or to the fumes of burning sulphur. Straw is also bleached by the fumes of sulphur; hence arises the sulphurous smell emitted by new strawhats and bonnets. They may, however, be bleached in a much better manner by the use of a little oxalic acid, or chloride of lime. Printed books, engravings, &c. may be whitened by first subjecting them to the action of weak chloride of lime-water; next to water soured with sulphuric acid; and lastly, to pure water, to remove any adhering acid or chlorine.

Clothes-Balls for removing grease and stains may be made as follows:—Fullers'-earth, two pounds; curd soap, one pound; ox-gall sufficient to make a stiff dough, with which form balls. Or—pipeclay, two pounds; fullers'-earth, one pound; whiting, one-half pound; white pepper, three ounces: mix with water. What are called *Scouring-Balls* are either composed of soft soap and fullers'-earth in equal proportions, beaten

well together, and formed into balls; or of curd soap, oil of turpentine, and ox-gall, in the proportion of half a pound of soap to one ounce of the turpentine and one ounce of the gall. *Wash-Balls*, again, are generally made of white curd or Windsor soap beaten up with bole or ochre; the mottled colours being produced by using a mixture of red, blue, or other coloured boles.

Cloth, Incombustible.—Cotton and linen fabrics prepared with a solution of sal-ammoniac, or phosphate of ammonia, may be placed in contact with ignited bodies without danger: they will carbonise, but not inflame. Solutions of alum, sea-salt, and the like, are used for the same purpose. If, for instance, an ounce or half an ounce of alum or sal-ammoniac be added to the last water used in rinsing a lady's dress, it would render it incombustible, or at least so little combustible that it would not take fire readily; and if it did, would be consumed without flame.

Temperance Drinks.—The simplest beverage of a cooling and pleasing quality, which contains no intoxicating fluid, is *lemonade*; this may be very easily made by pouring boiling water on sliced lemons, and sweetening with sugar to taste. Lemons, however, are not always to be procured, and in such a case citric acid, or cream of tartar, may be employed instead. Superior lemonade is made with lump-sugar.—*Ginger-Beer* may be made as follows:—Take of lump sugar three pounds, bruised ginger two ounces, cream of tartar one ounce, one or two lemons sliced, boiling water four gallons, and yeast eight ounces. Let the whole stand to work in a cask for four days, and then bottle off for use.—*Spruce-Beer*, which is a pleasant beverage when well prepared, and possesses slightly diuretic properties, may be prepared as follows:—Water, ten gallons; sugar, ten pounds; essence of spruce, quarter of a pound; yeast, half a pint. Dissolve the sugar and essence of spruce in the water, previously warmed; then allow it to cool a little, and add the yeast as in making ginger-beer: bottle immediately.

Treacle-Beer is a cheap drink, which may be made as follows:—Boil as much water as will fill twelve common quart bottles; and to it add one pound of treacle, or more, according to taste. When the treacle is dissolved, take the pot from the fire, and let the solution cool. When lukewarm, put into it half a gill of yeast. As soon as it is cold, bottle it, but do not put in the corks till next morning, when the yeast will have wrought over the top of the bottles. Let it stand in a cool place for two or three days, when it will be fit for use. Unless care is taken as to the proportion of yeast, and keeping cool, also to corking tightly, the bottles may burst, which is a serious loss to a poor family.

MISCELLANEOUS HINTS AND RECIPES.

To remove a tight Stopper.—It frequently happens that the stopper of a glass bottle or decanter becomes fixed in its place so firmly, that the exertion of force sufficient to withdraw it would endanger the vessel. In this case, if a cloth be wetted with hot water, and applied to the neck of the bottle, the glass will expand, and the neck will be enlarged, so as to allow the stopper to be easily withdrawn. Where hot water is not at hand, the same result may be produced by the friction of a handkerchief or strip of flannel, passed round the neck of the bottle, and drawn backwards and forwards with a see-saw motion.

Adhesive Plaster.—A very useful adhesive plaster may be made by melting together five parts of common or litharge plaster with one part of white resin. The mixture, when well incorporated, is spread on thin strips of linen with a spatula or table-knife. Such a plaster may be advantageously employed for keeping on other dressings, where ligatures and bandages might be objectionable.

Cutting Glass.—Panes or flat pieces of glass may be divided, when a glazier's diamond is not at hand, by making a notch with a file, and carrying a piece of hot charcoal in the line in which it is wished the fracture should proceed. The charcoal must be kept alive by blowing upon it with the breath. A red-hot iron will also do. Vials, bottle-necks, and the like, may be cut across by looping a cord round the part where the fracture is wanted, drawing the cord rapidly backwards and forwards till a considerable degree of heat is produced by the friction, and then immersing in cold water up to the line of fracture. The rapid and unequal contraction of the parts will cause the glass to snap asunder.

Mending China and Earthenware.—When holes are required to be drilled in china or earthenware for the purpose of riveting it when broken, procure a three-cornered file, and harden it completely by making the end red-hot, and plunging it into cold water; then grind the point quite sharp on a grindstone, and afterwards on an oil-stone or hone. With the point of this tool pick repeatedly on the spot to be bored, taking care not to use too much violence, lest the object should break. In a short time, or in a few minutes, by a continuance of the operation, a small conical hole will be forced out, not bigger than a pin's head, but which may afterwards be widened by introducing the point, and working the file round. Rivets of lead are those generally employed in this kind of operation.

The best cement for broken china or glass is that sold in the shops under the name of diamond cement, which is colourless, and resists moisture. This is made by soaking isinglas in water till it is soft, and then dissolving it in proof spirit. Add to this a little gum-ammoniac, or galbanum and mastic, both dissolved in as little alcohol as possible. When the cement is to be used, it must be gently liquefied by placing the vial containing it in boiling water. The vial must be well closed by a good cork, not a glass-stopper, as this may become fixed. It is applied to the broken edges with a camel-hair pencil.

When the objects are not to be exposed to moisture, white of egg alone, or mixed with finely-sifted quicklime, will answer pretty well. Shell-lac dissolved in spirits of wine is better. A very strong cement for earthenware is made by boiling slices of skim-milk-cheese with water into a paste, and then grinding it with quicklime in a marble mortar, or on a slab with a mallet. [For further information on the subjects of lutes and cements, see No. 21.]

To remove Crust or Fur from Teapots.—Put a good-sized lump of common soda into the pot, fill it quite full with boiling water; let it remain in the whole of a day and night; and, to keep the water hot for a time, set the pot near the fire. Should a teapot spout have become furred, when the water has been in for a sufficient length of time, put a skewer or knitting-needle into the spout to clean it. It will afterwards be necessary to scald and well wash the pot, to prevent any taste of soda, and to remove the fur, which will then come away easily.

Bronzing, or the process of imparting to wood, iron, stucco, or other material, the appearance of bronze, may be readily practised by attending to the directions given in Vol. I., p. 378.

Sympathetic Inks.—These are preparations used for writing on paper, the marks of which are invisible until acted upon by some re-agent. They are frequently employed in secret or playful correspondence. By heating the paper until it is nearly scorched, they may be rendered visible. The following may serve as specimens:—

1. Sulphate of copper and sal-ammoniac, equal parts, dissolved in water—writes colourless, but turns yellow when heated. 2. Onion juice—like the last. 3. A weak infusion of galls—turns black when moistened with weak copperas water. 4. A weak solution of sulphate of iron—turns blue when moistened with a weak solution of prussiate of potash—black with infusion of galls. 5. The diluted solutions of nitrate of silver and terchloride of gold—darken when exposed to the sunlight. 6. Aquafortis, spirits of salts, oil of vitriol, common salt, or saltpetre, dissolved in a large quantity of water—turn yellow or brown when heated. 7. Solution

of nitromuriate of cobalt—turns green when heated, and disappears again on cooling. 8. Solution of acetate of cobalt, to which a little nitre has been added—becomes rose-coloured when heated, and disappears again on being cooled.

Incorrodible and Indelible Inks.—Genuine asphaltum, one part; oil of turpentine, four parts; dissolve, and add lamp-black or black-lead to bring it to a proper consistence. Or—asphaltum, one part; oil of turpentine, four parts; dissolve, and colour with printer's ink, which any printer will sell by way of favour. These inks supply a cheap and excellent material for marking linen, &c. They are very permanent. They should be employed with stamps or types, or with the thin brass plates with letters cut therein. This method of marking is neater and easier than with the brush or pen. The marking-inks of the shops generally consist of preparations of nitrate of silver; but though capable of withstanding ordinary washing, are by no means proof against chlorine and ammonia. One of these inks may be prepared as follows:—Nitrate of silver, one to two drachms; water, ¾ of an ounce; dissolve; add as much of the strongest ammonia water as will dissolve the precipitate formed on its first addition; then further, add mucilage one or two drachms, and a little sap-green to colour. Writing executed with this ink turns black on being passed over a hot Italian-iron.

Common Inks and Writing Fluids, for which there are so many receipts, can be obtained so cheaply, and of such excellent quality, that it would be waste of time to attempt their manufacture for domestic use. An excellent ink, suitable for writing with steel pens, which it does not corrode, may be made of the following articles:—Sixty grains of caustic soda, a pint of water, and as much Indian ink as you think fit for making a proper blackness. *Copying ink* is prepared by adding a little sugar to ordinary black ink.

Writing rendered illegible by age may be restored by moistening it by means of a feather with an infusion of galls, or a solution of prussiate of potash slightly acidulated with muriatic acid, observing so to apply the liquid as to prevent the ink from spreading.

Lucifers may be made by first dipping thin slips of fir-wood in melted sulphur, and then tipping them with a mixture of sulphuret of antimony and chlorate of potash (both in fine powder), made into a paste with a solution of gum. They are inflamed by friction against a piece of emery or sand-paper. They are now sold so cheaply, that it would be folly to attempt their manufacture on a small scale.

CABINET COLLECTIONS.

Taxidermy—so called from the Greek *taxis*, order, and *derma*, skin—is the art of arranging, preparing, and preserving the skins and other exuviæ of animals, so as to represent their natural appearance. It embraces the entire art of preparing the skins of quadrupeds, the stuffing of birds and fishes, the mounting of insects, the cleaning and arranging of shells and zoophytes—in fine, the preparation and preservation of specimens in every department of the animal kingdom. Much of this lies of course beyond the circle of domestic economy, but many persons who have cabinets so arranged, allow them to fall into ruin and disorder for want of proper cleaning and attention.—*Skins of quadrupeds and birds*, whether mounted or not, should be kept free from dust either by being placed in cabinets, in glass-cases, or under glass shades; when dusty, use bellows, and handle as little as possible. Arsenical soap, corrosive sublimate, and oil of turpentine, are the preservative preparations; and once a skin is thoroughly dried, it may be preserved from putrefaction by being kept dry afterwards. Small bags of camphor laid in cabinets assist in warding off moths and other insects; but even with this the specimens will require to be occasionally examined. Should insects have commenced their attacks on any specimen, the only chance of further preservation is to bake it thoroughly in an oven.—*Bones* which have lost their whiteness may have it restored by immersion for ten or twelve hours in a weak solution of chloride of lime; and if oily, a little soda should be added to the solution. To obtain the skeleton of a small animal, bury the carcase with honey, and lay it near the nest of ants or wasps; in a few days it will be beautifully picked.—*Insects*, which are usually mounted on pins in flat trays with cork bottoms, or are kept in pill-boxes, test-tubes, and quills, require very delicate handling. Once in possession of a collection, keep it dry and free from dust, and disturb the specimens as little as possible, as they are not only extremely fragile, but are apt to lose the rich downy covering of their wings, which gives them colour and beauty. To ward off the attacks of mites, keep a supply of camphor, or sponge dipped in spirit of turpentine, in each tray; and if these harpies should appear, bake before a slow fire, or take equal parts of oil of anise, oil of thyme, and alcohol; mix, and apply a drop to the infected specimen. When large-bodied specimens become greasy, dip in spirits of turpentine, and dry with calcined magnesia, which can afterwards be blown off.—In collecting *shells*, kill the animal by gradual immersion in hot water; and remove it with the point of a knife or crooked pin. Retain the operculum of univalves; and tie the bivalves together after the animal has been removed. Marine shells should be steeped in fresh-water for several hours, to remove all saline matter which would afterwards deliquesce. Remove all extraneous matter, as sea-weed, serpulæ, and the like, with the knife or brush. Dead shells, or those picked up along shore, have often a tarnished appearance; this may be remedied by applying a little olive-oil with a brush. Polishing and whitening with acids is a barbarity worthy only of the dealer in curiosities. No shell is fit for a cabinet after such mutilation. Shells may be either kept in trays, divided into numerous compartments, or attached to cards with a little gum. In the latter case it requires two specimens—one to exhibit the front, the other the back of the shell. Minute and fragile shells are best preserved in glass tubes—common test-tubes.

Minerals are kept with little trouble, if dust be excluded. Never lift a fine specimen with the naked hand; stains of grease and perspiration are intolerable. Dust always with a pair of bellows. Certain species will endure washing; in other cases the appearance may be restored by fracturing anew.

Drying Flowers as Specimens.—A writer in the 'New Monthly Belle Assemblée' recommends the following plan:—'As pressure is necessary for drying flowers, the first thing requisite is to construct a press, which in this instance is composed of two of the thickest milled boards, each twenty inches in length and fourteen in width; also two leathern straps with buckles, and holes at intervals, to allow for the varying bulk of the press; then procure two quires of coarse sugar-paper, which can be purchased at a grocer's. After having selected the most perfect specimens of flowers, with their stems, lower leaves, and roots, when practicable—and carefully observe that the plants be free from dew or moisture—lay every portion out nicely on one of the coarse sheets, being careful at the same time that one part of the specimen does not interfere with another: the leaf should be filled. Allow several sheets to intervene before another sheet is occupied by specimens. If the flowers be delicate, their colour will be better preserved by placing blotting-paper between the folds to absorb the moisture. The plants are now ready to be put into the press, the straps forming the pressure, which, however, must not be great at first. It is necessary to remove the flowers every day, and dry the papers at the fire. When the specimens are quite dry, they should be taken from the press, and each plant separately sewed or fastened with gum on to half-sheets of foolscap; they may then be arranged in their natural orders, with the Linnæan class and order, and their place of growth, appended in the lower corners of the paper. The sheets thus classed

make up the Herbarium or *Hortus Siccus*, and are kept in trays, boxes, or in a cabinet constructed for the purpose, in a dry room, when they will be ready for future reference, which is the principal use to be derived from making a collection of plants.' Those who can afford the expense, will find 'botanical paper' (a thick, absorbent paper) the best for drying their specimens; they will also find a bag of small-shot a more delicate and efficient presser than either straps, screws, or weights. In every case the plants ought to be thoroughly dried—that is, deprived of their natural sap—before they are finally assorted in the *Hortus Siccus:* if not, they will soon get mouldy, lose their hues, and become a bundle of useless rubbish.

Marine Plants (fuci and algæ) may be preserved in a somewhat similar manner. After selecting the freshest specimens either from the rocks on which they grow, or from the beach on which they are generally profusely scattered after a storm, they ought to be well soaked in fresh-water, to remove all saline particles. This being done, they should next be floated in a broad shallow vessel, and the paper on which they are to be placed carefully inserted under them—gradually raising the paper, and disposing their filaments in a natural manner with the point of a bodkin or knitting-needle. This operation will be greatly facilitated by placing the paper on a thin board or plate of sheet-iron, so as to keep it smooth and level. When a specimen has been properly spread out, it should be laid aside to dry on a flat board or table; and finally subjected to proper pressure between milled boards. The natural mucus of the specimens will, in general, be sufficient to attach them firmly to the paper: if not, a slight touch of gum from a hair-pencil will answer the purpose. Sea-weeds neatly mounted and labelled make a very beautiful and instructive addition to the cabinet.

Preserving Flowers Fresh.—Flowers may be preserved in a fresh state for a considerable time by keeping them in a moist atmosphere. In the 'Gardeners' Chronicle' the following appear on this subject:—'It is now eighteen years ago since we first saw, in the drawing-room of a gentleman, in the hot dry weather of the dog-days, flowers preserved day after day in all their freshness by the following simple contrivance:—A flat dish of porcelain had water poured into it. In the water a vase of flowers was set; over the whole a bell-glass was placed with its rim in the water. This was a "Ward's case" in principle, although different in its construction. The air that surrounded the flowers being confined beneath the bell-glass, was constantly moist with the water that rose into it in the form of vapour. As fast as the water was condensed, it ran down the sides of the bell-glass back into the dish; and if means had been taken to enclose the water on the outside of the bell-glass, so as to prevent its evaporating into the air of the sitting-room, the atmosphere around the flowers would have remained continually damp. What is the explanation of this? Do the flowers feed on the viewless vapour that surrounds them? Perhaps they do; but the great cause of their preserving their freshness is to be sought in another fact. When flowers are brought into a sitting-room, they fade because of the dryness of the air. The air of a sitting-room is usually something drier than that of the garden, and always much more so than that of a good greenhouse or stove. Flowers, when gathered, are cut off from the supply of moisture collected for them by their roots, and their mutilated stems are far from having so great a power of sucking up fluids as the roots have. If, then, with diminished powers of feeding, they are exposed to augmented perspiration, as is the case in a dry sitting-room, it is evident that the balance of gain on the one hand by the roots, and of loss on the other hand by their whole surface, cannot be maintained. The result can only be their destruction. Now, to place them in a damp atmosphere is to restore this balance; because, if their power of sucking by their wounded ends is diminished, so is their power of perspiring; for a damp atmosphere will rob them of no water—hence they maintain their freshness. The only difference between plants in a "Ward's case" and flowers in the little apparatus just described is this—that the former is intended for plants to grow in for a considerable space of time, while the latter is merely for their preservation for a few days; and that the air which surrounds the flowers is always charged with the same quantity of vapour, will vary with the circumstances, and at the will of him who has the management of it. We recommend those who love to see fresh flowers in their sitting-rooms in dry weather to procure it. The experiment can be tried by inserting a tumbler over a rose-bud in a saucer of water.'

PERSONAL ECONOMY—THE TOILET.

Personal cleaning and decoration are the proper duty at the toilet, which requires regular performance daily. We shall speak first of matters connected with the gentleman's toilet:—

Shaving.—Some beards are more hard and difficult to shave than others. The usual plan is to soften them with soap lather; but this is not sufficient with beards which are somewhat stubborn. We recommend all to try the following plan:—Rub the face or beard with a little soap and water with the hand over the basin, and when pretty well rubbed or softened, apply the lather. Raise the lather from warm water, and apply with a brush. The best kind of soap for shaving is Bandana, but Windsor is also generally liked. Among the shaving *pastes* in vogue the following may be mentioned:—1. White wax, spermaceti, and almond-oil, of each a quarter ounce; melt, and while warm, beat in two squares of Windsor soap, previously reduced to a paste, with rose-water. 2. Melt together a half-ounce each of spermaceti, white wax, and oil of almonds; beat it up with three ounces of the best white soap, and a sufficient quantity of Eau de Cologne. Although warm water is most agreeable and suitable for shaving with, it is advantageous for every one to accustom himself to shaving with cold water, as it will render him independent of such assistance when travelling, or in cases of emergency.

It is of no use going to a great expense in purchasing razors. A razor of the best kind may be had for from four to eight shillings; and as their tempering is very much a matter of chance, sometimes a first-rate razor may be had for two or three shillings. Indeed one of the very best razors now in the market is Rogers' 'old English,' which may be had for three shillings and sixpence. Supposing a sharp and good razor to be procured, it may last a whole lifetime with ordinary care. We have used one for twenty years, and it is still as good as new. Some persons prefer keeping six or seven razors, and changing them daily; but in this there is no absolute utility. Razors become blunt more from bad management than fair work in shaving. When to be used, dip the razor in hot water, for this adds keenness to the edge; and before putting it away, wash the razor gently, to remove all impurities. Do not wipe it with or upon paper, for that spoils the edge; wipe it only with a fine rag. Before putting it away in its case, give it a turn or two on a strop. Several kinds of strops are now offered for sale; and all, very properly, are mounted on hard board. The best we have seen is an American invention, with four sides of different degrees of fineness, from the hone to smooth stropping. In any case, take care always to draw the razor smoothly and flatly *from heel to point* along the strop. Do not draw first one way and then push another. In general, one or two turns will be enough. Never leave your razors in drawers or cases which are accessible to servants or children. By locking them up, you will keep them in better order than by all the other means you employ.

Razor Pastes.—This is the term applied to certain compositions applied to razor-strops to give them the necessary whetting surface. The following are recommended:—1. Emery reduced to an impalpable powder,

two parts; spermaceti ointment, one part; mix together, and rub it over the strop. 2. Jewellers' rouge, black-lead, and suet, mixed in equal parts. 3. Prepared putty-powder, one ounce; powdered oxalic acid, one-fourth ounce; powdered gum, twenty grains; make it into a stiff paste with water, and evenly and thinly spread it over the strop. With very little friction, this last is said to give a fine edge to the razor, and its efficiency is still increased by being moistened.

Cut in Shaving.—The bleeding may be at once effectually stopped by placing on the wound a small portion of wool from a beaver hat. We have known cases in which bleeding from very serious wounds have been stopped by the application of hat stuff, or fine floss, when all other means failed.

The Teeth.—The cleaning and proper management of the teeth is the most difficult operation of the toilet. Whether arising from heat of the stomach or other constitutional causes, the teeth of some persons are much more liable to become discoloured and decay than others. In general, even in the worst cases, much might be done in youth to prevent future deterioration of teeth; but children are ignorant, and parents are lamentably careless on this important matter of personal economy, and remedies often require to be applied when too late. Parents desirous of seeing their children grow up with good teeth, should cause them to be cleaned with scrupulous regularity daily, though only with a brush and tepid water. If the teeth appear crowded, so that there is a fear of one tooth shooting over another, a dentist ought by all means to be employed to thin the row, and allow all to grow straight.

The daily cleaning of the teeth should take place every morning after washing the face. Employ in preference tepid water and a moderately hard brush, taking care not to injure the gums by the friction. Various dentifrices or powders are offered for sale, and which the opulent have opportunities of testing; but we know of none better than finely-powdered charcoal—that is, charred wood well ground in a mortar, and kept in a box secluded from the air. It may be purchased, ready for use, at a small price from perfumers. By putting a little of this on the wet brush, and rubbing the teeth with it, impurities and discolorations will be removed without injuring the enamel. Rinse well afterwards with clean water. A much stronger dentifrice consists of the powder of burnt tobacco; but it contains silica, or gritty particles of sand, and cannot be recommended for common use. Indeed all preparations, such as those of chalk, pumice, cuttle-fish bone, &c. act mechanically, and are liable to the same objection. Chemical solutions are free from this objection; but unless their composition is thoroughly known, it is better to avoid them. In case of foulness or sponginess of the gums, powdered rhatany, cinchona bark, and catechu, on account of their astringent properties, have been found to be useful.

It is said to have been lately ascertained, by microscopic examination, that the *tartar or crust upon teeth* is produced in the same manner as coral, by certain animalcules. After the tartar, which is a mere nidus, adheres firmly to the teeth, the animalculæ, by insinuating themselves between the teeth and the gum, occasion disease to both; but the secretion from them is often so offensive, as to contaminate the breath. M. La Beaume has made numerous experiments with different mineral, vegetable, and animal acids, and with alcohol, to ascertain their effects on the animalculæ, and on their habitation; and it is a curious fact, that of all the articles he has employed, the true *vinegar* acid (not the pyroligneous acid, which is now generally sold for it) almost instantaneously killed the animalculæ, and acted powerfully to decompose the concretions, so that they were easily removed by a brush. In order to destroy the animalculæ and their eggs, and to decompose the production which protects them, M. La Beaume recommends the teeth to be brushed every morning with the vinegar acid diluted with rose-water, and immediately afterwards to make use of the powdered areca-nut charcoal, and the tincture of rhatany. The use of the diluted acetic acid every morning will, in the course of a few days, entirely remove the tartar, and the regular employment of the areca charcoal and tincture of rhatany every, or every other, morning, will effectually prevent the generation of the animalculæ; but if there be a strong disposition to their production, he advises the diluted acetic acid to be used once a week. Dentists in general oppose the use of an acid, on the supposition that it is capable of decomposing the enamel. 'This opposition,' observes Dr Good, 'arises from an ignorance of the gradations of chemical affinities;' all of them, however, very freely use the most potent mineral acids to facilitate the removal of the tartar in the operation termed scaling. The true vinegar acid is incapable of acting chemically on the enamel of the teeth. We have made trial of the vinegar acid, which may be had of any chemist, and found it to be as effectual as above stated. Instead of areca-nut charcoal, we use the common refined wood charcoal, which seems to have the same effect. A lavation of this kind should not be performed oftener than twice a week, the tooth-brush and plain tepid water being used all other times.

The Breath.—Few things are more disagreeable or offensive than a fetid breath. 'Various means,' says the author of the 'Encyclopædia of Practical Receipts,' 'have been proposed to remove this annoyance, depending principally on the administration of aromatics, which, by their odour, might smother it for a time; but these require continual repetition, and are liable to interfere with the functions of digestion. The real cause of a fetid breath is either a diseased stomach or carious teeth. When the former is the case, aperients should be administered, and if these do not succeed, an emetic may be given, followed by a dose of salts or castor-oil occasionally. When rotten teeth are the cause, they should be removed; or, if this be impossible, they should be kept clean. Foul teeth often cause the breath to smell; and for this the use of the brush should be a daily habit. Occasionally rinsing out the mouth with a little clean water, to which a few drops of chloride of lime, or chloride of soda, has been added, is an effective method. The following lozenges have also been recommended:—Gum catechu, two ounces; white sugar, four ounces; orris powder, one ounce; make them into a paste with mucilage, and add a drop or two of neroli. One or two may be sucked at pleasure.' This, it must be observed, only disguises, not remedies the evil. A useful wash for carious teeth is made thus:—Chloride of lime, half an ounce; water, two ounces; agitate well together in a phial for half an hour; filter and add spirit, two ounces; rose or orange-flower water, one ounce. Use diluted, with water. Another very valuable wash for the teeth and gums, consisting of borax and tincture of myrrh and camphor, is thus prepared:—Dissolve two ounces of borax in three pints of warm water; before quite cold, add thereto one teaspoonful of tincture of myrrh, and one tablespoonful of spirits of camphor; bottle the mixture for use. One wine glass of the solution, added to half a pint of tepid water, is sufficient for each application.

The Nails.—Keeping the nails of the fingers in order is a proper duty of the toilet. They should be brushed with soap and water when washing the hands. While still wet, or when wiping the hands with the towel, push back the skin which is apt to grow over the nail, and thus keep the top of the nails neatly rounded. The points of the nails should be regularly pared once a week. For *whitening* the nails, we have seen the following mixture recommended:—Two drachms of diluted sulphuric acid; one drachm tincture of myrrh; and four ounces of pure soft water. The nails to be dipped into this mixture after the hands have been thoroughly cleansed with soap and water. Without adverting to the danger of such preparations, it may be remarked that the nails have naturally a delicate flesh or pinkish colour and shining polish, and that to

whiten them is as absurd as to stain them *yellow* after the fashion of the Orientals.

The Hair.—In a sound and healthy constitution, the best preserver and beautifier of the hair is regular and careful cleaning. Washing, combing, and brushing are quite sufficient to keep it in proper order; and where these fail, no amount of oils, lotions, powders, or appliances, will remedy the evil.—'*Baldness*,' says the authority above quoted, 'is generally produced by fever or old age, but is sometimes found in comparatively young people enjoying perfect health. When the hair-bulbs have disappeared, there is no means known that will restore the hair, notwithstanding the daily assurances to the contrary by numerous advertising impostors. When a disposition to baldness exists, or when the hair falls off in large quantities, the constant use of the hair-brush, and any emollient oil or pomatum, scented with some stimulating aromatic, will generally prove sufficient. Should this not succeed, the head should be shaved.'—*Stray hairs* sometimes grow in the nose and ears to an uncomfortable extent. Thin or shorten them with a toilet-scissors; or if it is wished to remove them—which is not always a very safe plan—do so smartly with a pair of tweezers. The chemical *depilatories* in use in the fashionable world are almost without exception highly objectionable preparations, having the effect not only of removing the hair, but destroying likewise the vitality of the skin to which they may be incautiously applied. The majority of them are composed of quicklime, orpiment, and some strong alkali—substances the name of which may warn parties against their application.—*Hair-dyes* are equally objectionable, and are all only temporary expedients, as the hair, upon growing, soon leaves an undyed surface beneath. They are principally of two sorts—those into which litharge and quicklime enter, and those in which nitrate of silver forms the chief ingredient. Thus to render the hair instantaneously black we are directed 'to moisten it with a solution of nitrate of silver in water (1 to 7 or 8), and then with a weak solution of hydrosulphuret of ammonia!'

Pomatum.—This is a soft unguent which is valuable for softening the hands, and preventing them chopping in cold dry weather, or for moistening the hair. It was originally named from its containing apple (*pomum*, Latin), and consisted of lard, rose-water, and the pulp of apples. It now consists of perfumed hogs'-lard, the apple being omitted. The famed *sultana pomatum* is made as follows:—Melt together half a pound of beef suet, the same of bears' grease, an ounce of white wax, and two ounces of olive-oil; and add to it, tied up loosely in muslin, one ounce of bruised cloves, half an ounce of cinnamon, two bruised tonquin beans, and four grains of musk; strain, and put into pots. The article called bears' grease, usually sold in the shops, is little else than perfumed beef-marrow; and the many oils offered for restoring and softening the hair are chiefly olive or almond-oil, perfumed with different scents. In general, if the hair be well brushed, no such applications are necessary, and in most cases they create a scurf on the head, which it requires considerable trouble to get rid of.

Pomade Divine.—This is a soft and valuable unguent, possessing a fine aromatic odour. Dr Biddoes recommends it to be made as follows:—Steep twelve ounces of beef-marrow in water ten days (changing the water occasionally), and then steep it in rose-water. Put it into a jar with half an ounce of flowers of benjamin, the same of storax and iris-root in powder, and two drachms each of cinnamon, nutmeg, and cloves, in powder. Cover the jar closely, set it in a vessel of water, and put it on the fire; and when the pomade is thus melted, strain it for use. As a very small quantity is ever used at a time, in general it will be found much more economical to buy a small bottle of it than to prepare the article.

Cold Cream.—This is a simple and cooling ointment, exceedingly serviceable for rough or chopped hands in winter, or for keeping the skin soft. It is very easily made. Take half an ounce of white wax, and put it into a small basin, with two ounces of almond-oil. Place the basin by the side of the fire till the wax is dissolved in the oil. When quite melted, add two ounces of rose-water. This must be done very slowly, little by little; and as you pour it in, beat the mixture smartly with a fork to make the water incorporate. When all is incorporated, the cold cream is complete, and you may pour it into jars for future use. This cold cream is much better than that which is usually sold in shops, and which is too frequently made of inferior ingredients.—*Bears'-Grease*, which possesses no virtue or superiority over other animal fat, has rather an unpleasant odour, and is always sold (when sold at all) disguised with perfumes. A factitious article may be prepared as follows:—Hogs'-lard, sixteen ounces; flowers of benzoin and palm-oil, of each one-half ounce. Melt together until combined, and stir till cold. This mixture is said to keep long without becoming rancid, and may be scented at pleasure.

A very fragrant Lavender-Water may be prepared by mixing two ounces of English oil of lavender, one ounce of essence of ambergris, one pint of *Eau de Cologne*, and one quart of rectified spirit.

Spermaceti Ointment.—This is a cooling and healing ointment for wounds. Take a quarter of an ounce of white wax, and half an ounce of spermaceti (which is a hard white material), and put them in a small basin with two ounces of almond-oil. Place the basin by the side of the fire till the wax and spermaceti are dissolved. When cold, the ointment is ready for use. This is an article which it is also much better to make than to purchase. When you make it yourself, you know that it has no irritating or inferior materials in it.

The Feet—Corns.—To keep the feet in a proper condition, they should be frequently soaked and well washed. At these times, the nails of the toes should be pared, and prevented from growing into the flesh. Corns are the most troublesome evils connected with the feet. They are of two kinds—soft and hard. Soft corns are those which grow between the toes. They may be easily removed by applying ivy leaf steeped in vinegar; if the corn be very painful, change the piece of ivy leaf every morning. The leaf may be steeped for one or two days before using. Hard corns, which grow on the outside of the toes, are caused by friction from the shoes; and we know of nothing so likely to prevent them as easy soft shoes and very frequent soaking of the feet in warm water. Every method of extracting corns seems but to afford temporary relief, and never will be attended with complete success unless attention is paid to the shoes. It is very dangerous to cut corns too deep, on account of the multiplicity of nerves running in every direction of the toes. Caustic, or strong acids, have the desired effect in removing corns, but their use should be committed to the hands of a skilful surgeon.—The *bunion*, or swelling on the ball of the great toe, is produced by the same cause as the corn—pressure and irritation by friction. The treatment recommended for corns will succeed in cases of bunions; but in consequence of the greater extension of the disease, the cure of course is more tedious. When a bunion is commencing, it may be effectually stopped by poulticing, and then opening with a lancet; but this must be committed to the hands of a surgical attendant.—For *chilblains*, Sir A. Cooper has recommended the following liniment:—One ounce of camphorated spirits of wine, half an ounce of liquid subacetate of lead; mix, and apply in the usual way three or four times a day.

Cosmetics.—These consist of washes and pastes for improving the skin, and are in general highly objectionable; for the greater number contain poisonous ingredients, and while removing from the surface any discoloration, drive the disease inward, and therefore do much more harm than good. Lotions for pimples, freckle-washes, milk of roses, rouge, and all such trash, we studiously discommend. The best of all purifiers is water with a cloth; the best beautifiers are *health*, *exercise*, and GOOD TEMPER.

INDEX, AND GLOSSARY OF TERMS.

*** The Figures in the columns indicate the pages of the Text in which the particular term or subject is fully explained.

Abatement, in heraldry, symbols of disgrace introduced into arms, as in the case of bastardy, cowardice, and the like; in law, a plea of abatement is pleaded to a declaration, writ, and so forth, on account of some defect in form.

Abbreviation (Lat. *brevis*, short), a term applied to certain processes of abridgment in arithmetic; in music, a stroke which, placed over or under a note, divides it into quavers, if there be only one—if two, into semiquavers—and if three, into demisemiquavers; in writing, the use of contractions or initials for entire words. Before the invention of printing such abbreviations were exceedingly frequent, now they are employed chiefly in titles, thus:—

A. B. or B. A., Bachelor of Arts.
A. D. (*Anno Domini*), in the year of our Lord; A. H., in the year of the Hejira; A. M. (*Anno Mundi*), in the year of the world; A. C. or B. C., the year before Christ; A. U. C. (*Anno Urbe Condita*), the year from the building of Rome.
A. M. or M. A., Master of Arts.
A. M. (*Ante Meridian*), forenoon; P. M. (*Post Meridian*), afternoon.
B. C. L., Bachelor of Civil Law.
B. D., Bachelor of Divinity.
C. B., Companion of the Bath.
C. E., Civil Engineer.
Clk., Clerk.
D. C. L., Doctor of Civil Law.
D. D., Doctor of Divinity.
D. G. (*Dei Gratia*), by the grace of God.
E. I. C., East India Company; E. I. C. S., East India Company's Service.
F. D., Defender of the Faith.
F. R. S., Fellow of the Royal Society; L., of London; E., of Edinburgh.
G. C. B., Grand Cross of the Bath.
G. C. H., Grand Cross of Hanover.
H. M. S., His or Her Majesty's Service.
i. e. (*id est*), that is to say; *ib.*, in the same place; *id.*, the same.
K. B., Knight of the Bath.
K. C. B., Knight Commander of the Bath.
K. C. H., Knight Commander of Hanover.
K. G., Knight of the Garter.
LL. D., Doctor of Laws.
M. D., Doctor of Medicine.
M. P., Member of Parliament.
M. R. C. S., Member of the Royal College of Surgeons.
MS., Manuscript; MSS., Manuscripts.
M. R. I. A., Member of the Royal Irish Academy.
N. B. (*nota bene*), Observe.
Nem. con. (*nemine contradicente*), no one contradicting; Nem. dis., no one dissenting.
O. S., Old Style; N. S., New Style.
Ph. D., Doctor of Philosophy.
R. A., Royal Academy.
R. E., Royal Engineers.
R. M., Royal Marines.
R. N., Royal Navy.
S. T. P. (*Sanctæ Theologiæ Professor*), Doctor of Divinity.
Viz. (*videlicet*), namely.

Aberdeen, description and account of, 239.

Abridgment, in literature, a compendious arrangement of the matter contained in a larger work; differing from an abstract, which gives a mere analysis or general view of the leading particulars. The French word *précis* is sometimes used as synonymous with abstract; so also synopsis, which is a Greek word, signifying a collective view of any subject, as a synopsis of geology, astronomy, and the like.

Abstractions, in Logic, 361.

Academia, a pleasant and finely-wooded spot in the vicinity of Athens, which derived its name from the proprietor Academus, and became renowned as the spot where Plato taught philosophy to his pupils. These were thence termed Academics; and a familiar appellation (*Academy*), originating in the same source, is bestowed on seats of learning and education at the present day.

Accolade (Lat. *ad*, to, and *collum*, the neck), the touch or slight blow given to the neck or shoulder on dubbing a knight.

Accordion, musical instrument, 768.

Achaia, a district of the Peloponnesus or Morea, the people of which held so considerable a station among the ancient Greeks, that their name was frequently used to denote the entire population of the country.

Achates, a follower of Æneas, so faithful and devoted, that his name has become proverbially significant of constancy in friendship.

Acheron, a gloomy river in the fabulous infernal regions of the classical mythology.

Achilles, son of Peleus, king of Thessaly, by the sea-goddess Thetis. Educated by Chiron, a learned centaur (half man, half horse), Achilles is represented as having become perfect in all the accomplishments of his heroic age, and had just attained the prime of youthful manhood, when the princes of Greece went to war with Troy. Thetis, foreknowing that her son would fall in that contest, disguised him as a female to prevent his entering into it; but he was detected, and, not against his will, went with the other chiefs to Troy, where he distinguished himself above all the Greeks by consummate daring and prowess. A quarrel with the leader, Agamemnon, caused him at length to withdraw in disgust from the field; and in spite of the intreaties of his countrymen, he remained obstinately inactive in his ships, until the death of Patroclus by the hand of Hector caused him to don the splendid panoply formed for him by the armourer of the gods, and rush to the scene of battle. Many Trojans fell before the infuriated chieftain, and, finally, Hector himself was cast lifeless on the field. In his youthful days Thetis had rendered her son invulnerable by dipping him in the river Styx; but the tendon of the heel by which she held him (hence called the *tendo Achillis*) was left unsecured, and Paris, the brother of Hector, slew the chief by a wound in that spot, thus fulfilling the decree of fate. Strength, swiftness, and beauty of person, are the leading characteristics assigned to Achilles by Homer.

Acquisitiveness, in Phrenology, 342.

Acrocorinthus, the citadel rock of Corinth, an eminence of great height and strength.

Actæon, a Bœotian huntsman, who, having accidentally beheld Diana bathing, was changed by the chaste goddess into a stag, and torn to pieces by his own dogs. The 'fate of Actæon' is a phrase expressive of the ruin of a man by his own friends, or from unwittingly becoming cognisant of dangerous secrets.

Activities, of the Human Mind, 334.

Adagio (Ital. leisurely), in music, the slowest of musical tone, grave only excepted.

Addition, in Arithmetic, 595; in Algebra, 604.
Address, forms of, in Rhetoric, 693.
Adhesiveness, in Phrenology, 340.
Adjectives, in Grammar, 578; inflection of, 582.
Administration of government, 45.
Adonis, a youth of great beauty beloved by Venus, who, on his being gored to death by a wild boar, converted him into the flower anemone.
Adverb, in Grammar, 579.
Æneas, a Trojan prince, son of Anchises and Venus, who, on the fall of Troy, is said to have wandered with a small band to Italy, and to have there laid the foundation of the Roman Empire. The Romans were proud of this traditional descent; and Virgil made it the subject of his great national epic, 97.
Æolian harp (so called from Æolus, god of the winds), a simple instrument which produces a pleasing combination of sounds by the action of the wind. It consists of strings of catgut, or wire, stretched parallel over a thin box of deal, with sounding holes cut in the top. The strings being tuned in unison, the effect is produced by placing the instrument in a current of air, such as is caused by opening a door or window.
Æolus, the god of the winds, according to the classical mythology. The 'Æolian harp' derives from him its designation.
Ærarians, the artisan class of ancient Rome, 101.
Æschylus, a tragic writer of Athens, whose style is peculiarly vehement and sublime.
Æsculapius, a personage honoured as the god of medicine, and reputed to be the son of Apollo by a mortal nymph. Exposed in infancy, to save his mother's reputation, he fell under the care of Chiron the centaur, and acquired such skill in the healing art as even to recover dead persons from the grave. For this feat, Pluto, the king of the nether realms, persuaded Jupiter to kill him with a thunderbolt. Many temples were erected to Æsculapius; and he was generally represented in the form of an old man, with one hand on a staff and the other on a serpent's head. The latter animal is to this day the emblem of medical science; and the name of the supposed divinity is often familiarly applied to the art and its professors.
Æsop, a native of Phrygia, renowned as a writer of fables. His actual productions are lost; but the Latin fabulists profess to have translated from his original Greek. He is stated to have been deformed in person, and a slave by station.
Æsthetics (Gr. *aisthetikos*, having the power of perception by means of the senses): in the fine arts that science which derives the first principles in all the arts from the effect which certain combinations have on the mind, as connected with nature and right reason.
Ætna, the most famous volcanic mountain in the world, situated in Sicily, and rising to a height of 10,870 feet above the sea-level. The noise and flame emitted from it led the imaginative ancients to make its interior the workshop of the smith-god Vulcan, 198, *et passim*.
Africa, General Description and Account of, 273–280.
Agamemnon, king of Mycenæ, in the Peloponnesus, and leader of the Greeks in the expedition against Troy. The character given to him by Homer is one of massive grandeur. He was murdered, on his return home, by his wife Clytemnestra and her paramour Ægisthus.
Aglaia, one of the three Graces, 87.
Agrarian Law, in Roman history, 99.
Agricola (Cn. Julius), a Roman general, who, under various emperors, served with great distinction in Britain.
Agricultural statistics of Britain, 185.
Aide-de-camp (Fr.), an officer appointed to attend a general officer in the field, in winter quarters and in garrison, to receive and carry orders.

Air (ventilation), duties regarding, 451.
Ajax, son of Telamon, and famous in the war of Troy for his bravery and vast though unwieldy strength. He became mad, and slew himself, because the arms of the deceased Achilles were not assigned to him.
Alarms in churches and theatres, 776.
Album, originally a white board or tablet on which the prætor's edicts were written; the modern application of the term is sufficiently familiar.
Alcestis, wife of Admetus, king of Pheræ, who voluntarily died for her husband's sake, and was brought again from the regions of the dead by Hercules.
Alcibiades, an Athenian noble, remarkable for beauty of person and intellectual capacity, and not less notorious for his vices and luxurious effeminacy. He was a pupil of the philosopher Socrates, and owed much to his instructions. After a youth spent for the most in folly, yet folly redeemed in part by generous actions, he entered into the service of the state, and showed eminent talents as a military and naval commander, 93–94.
Alecto, one of the three Furies, daughters of Nox or Night, 87.
Alexander, a name borne by several Macedonian princes and others, but rendered chiefly illustrious as the designation of the son of Philip of Macedon by his wife Olympias; his career, 95–96.
Alexandria, a city of Egypt, founded by Alexander the Great, famous for its lighthouse, its learned men, and its two splendid libraries, successively destroyed by Augustus Cæsar and the Caliph Omar.
Alexandrine, in versification the French heroic verse of twelve syllables or six iambic feet; *e. g.*—

'Which, like a wounded snake, drags its slow length along.'

Algebra, 604–608; logic of, 366.
Alimentiveness, in Phrenology, 341.
Alliteration, in rhetoric, the consecutive use of words beginning with or containing the same letter, as—

'And round the rugged rocks the ragged ruffian ran.'

Amalthēa, the reputed nurse of the god Jupiter, whom she fed with goat's milk. Some mythologists say that she herself was a goat, and her horn is often termed the 'Horn of Plenty.'
Amativeness, in Phrenology, 340.
Amazon.—The Amazons are said to have been a tribe of Scythian women, who did not allow men to live with them, killed the majority of their male children, and trained their female offspring to war, burning off their right breasts for the better use of the bow. Whether an imaginary race or not, the word Amazon has become a proverbial designation for a woman of masculine habits and temperament.
Ambassadors, functions of, in diplomacy, 45.
Ambition, metaphysically considered, 534.
America, North, General Account of, 289–304; South, 305–320; British, 292.
American war of independence, 162.
American antiquities, 687.
American variety of mankind, physical and mental characteristics of, 5.
Ammon.—In mythology, a Libyan divinity, adopted by the Greeks, and by them identified with their Jupiter. An oasis in the deserts bordering on the Nile contained a famous temple and oracle of Jupiter Ammon, the ruins of which are still discernible.
Amphictyon, a person who founded a general council for the twelve leading states of Greece, and from whom such assemblages were permanently called Amphictyonic Councils, 89.
Amphion, an individual of semi-divine origin, who founded Thebes, in whole or part, and is stated to have excelled so much in music as to have moved the stones voluntarily to take their places in the structures of the new city.
Amphitryon, husband of Alcmena, the mother of Hercules by Jupiter. An expression of Molière in a play on this subject, 'L'Amphitryon où l'on dine,' has

caused a hospitable dinner-giver to get the familiar name of an Amphitryon.
AMUSEMENTS, IN-DOOR, 657–672.
Amusements and Recreations, duties regarding, 477.
Anacreon, a bard of Iona, whose graceful verse is devoted to love and wine.
Analogy (Gr.) in ordinary language signifies a relation or similarity between different things in certain respects. It is used as a term, with slight differences of meaning, in logic, rhetoric, and mathematics.
Andromaché, wife of Hector and mother of Astyanax, celebrated by Homer for her conjugal affection and domestic virtues.
Andromĕda, daughter of an Ethiopian king, who, being chained to a rock, and exposed to a sea-monster, was rescued from that peril by Perseus, son of Danae, and, by promise, became his wife.
Anger, regulation of, 458.
Angles, in Geometry, 611.
Anglo-Saxon, Superstitions, 419.
Animal Physiology, design in, 373.
Animated Nature, compensation of parts in, 379.
Annuities, in Social Economics, 539.
Antæus, son of the earth and sea, a Libyan giant, slain by Hercules. When a man seems to derive fresh vigour from an overthrow, he is compared to Antæus, because, at every fall, his mother earth gave that giant fresh strength; and Hercules only foiled him by holding him up, and squeezing him to death.
Anthologies (Gr. *anthos*, blossom, and *logōs*, discourse). The Greek anthologies are collections of minor poems, chiefly epigrams, of various authors. Many of the pieces are remarkable for their beauty and simplicity in thought, and their peculiar turns of expression. The term is now applied more generally to any collection of minor pieces.
Antinŏus, a friend of Adrian, whose form, as represented by ancient sculptors, has become significant of a peculiar description of physical beauty.
Antiquities—see Archæology, 673–688.
Antonius (Marcus), a Roman, who shared for a time the empire of the world with Augustus Cæsar, 110.
Anŭbis, an Egyptian idol, represented with the head of a dog.
Apelles, a native of the isle of Cos, usually regarded as the greatest of the ancient painters. He followed for a time the fortunes of Alexander.
Aphorism (Gr.), a comprehensive maxim or principle expressed in a few words.
Apicius, a noted Roman epicure, who expended £800,000 on his appetite, and finally killed himself in fear of want, the £80,000 which still remained to him at the time being insufficient to sustain the proper rate of gourmandising extravagance.
Apis, a god of the Egyptians, venerated under the form of a white bull.
Apocrypha, history of the, 390.
Apollo, the son of Jupiter and Latona, god of the sun, music, medicine, and the fine arts. Born in the isle of Delos, he soon after slew the serpent Python, sent by Jupiter's wife to plague Latona, and thus gained for himself the name of the Pythian Archer. A noble ancient statue, existing in Rome, and splendidly described by Lord Byron, gives an image of him in this character. He is usually pictured as a beardless youth, holding a bow or lyre. Like others of the mythological deities, he is said to have had many amours with the daughters of earth, and even to have dwelt there for nine years as a shepherd when expelled from heaven by his sire. The chief supplementary names given to him in poetry are—the Delian, Cynthian, Delphic, and Lycian god; and, as sun-god, he is commonly named Phœbus. His principal temples and oracles were at Delphi, Delos, and Claros, the Delphic one being the most renowned oracle of the earth. A youth of fine form is often styled an Apollo, and the poets allude endlessly to the god as their patron and guardian.
Appetites, metaphysically considered, 527.
Applegath's printing-machines, 717–720.
Appraiser, one who values goods under distress for rent; Appraisement, the value of goods sold under such valuation.
Approbation, love of, in Phrenology, 543.
April festival, Calendar for, 439.
Aquatinto, species of engraving, 727.
Arabesque (Fr.): painting and sculpture after the Arabian taste, which largely employed a capricious and fantastic but highly-imaginative species of ornament composed of fruits, flowers, and other objects.
Arabia, ancient history of, 73.
Arachné, a woman of Colophon, so well skilled in needlework that she challenged competition with Minerva, and, being defeated, hanged herself, on which the goddess changed her to a spider.
Arcadia, a pastoral region in the centre of the Peloponnesus, so much distinguished for natural beauty, and for the happy and simple life of its population, that the word has long been used to signify a scene of rural and inartificial enjoyment.
ARCHÆOLOGY, science of, 673–688.
Archimedes, a geometrician of Syracuse, of great abilities. Among his other inventions, he is said to have discovered a mode of setting fire to ships from a distance by means of burning-glass—a feat which Buffon proved to be not impracticable. When his sovereign suspected a tradesman of having used some alloy in making a golden crown, Archimedes was applied to in order to discover the truth. At a loss at first, the philosopher finally ran out of his house towards the palace, crying, '*Eureka!*' ('I have found it!')—the idea having occurred to him of immersing the crown in a vessel of water, and measuring what quantity of liquid ran over. He was killed at the siege of Syracuse; and though interred with honour, the spot where he lay remained long unknown, till discovered by Cicero. Archimedes also invented the pumping-screw. A small part only of his writings is now in existence.
Archipelăgus (Archipelago), a name given to any sea studded with islands, as the Grecian or Indian Archipelago.
Archives, a term signifying properly the repositories of public documents and records, but often applied to the records themselves.
Archons, the ancient title of the chief magistrates of Athens, 85.
Areopagitæ, the judges of the Areopagus, a seat of justice on a mount near Athens.
Arethusa, a nymph of Diana's train, changed by her mistress into a Sicilian fount, to preserve her from the pursuit of the Grecian river-god Alpheus.
Argent (Lat. *argentum*, silver), a term in Heraldry, 47.
Argo, a famous ship of antiquity, which is said to have carried Jason and a renowned body of Greeks (called the Argonauts) to Colchis, a district on the eastern shore of the Black Sea, in quest of a Golden Fleece, surreptitiously taken from the Greeks. Numerous writers have treated of this subject.
Argus, a being with a hundred eyes, set by Juno to watch an earthly mistress of Jupiter, and slain by Mercury. A jealous custodian often receives the title of an Argus.
Ariadné, daughter of Minos, king of Crete, who, when the Athenian prince Theseus was shut up in the celebrated Cretan labyrinth to be devoured by a monster, gave him a clue of thread by which he extricated himself. The Clue of Ariadné has become a byword. Being cruelly abandoned by Theseus, Ariadné, according to the poets, gained the love of the god Bacchus, and by him was elevated to a place among the constellations.
Arian, or Indo-European race, in Ethnology, comprehends the Hindoos, Persians, Affghans, Armenians, and the great bulk of the European nations, 1.
Arion, a famous musician, who, when in peril of his

life at sea, played so sweetly that some grateful dolphins bore him safely ashore.
Aristides, a statesman and warrior of Athens, whose conduct earned for him the title of the *Just*, 91.
Aristocracies and aristocratic governments, 41.
Aristophanes, a famous comic satirist of Athens.
Aristotle, a Greek philosopher of the first rank, born at Stagyra in Macedon, and hence called the Stagyrite. After studying under Plato, who valued him so much as to style him the *mind* of the school, Aristotle opened a seminary of his own, and long taught with great success. From his lecturing to his pupils while walking, they received the name of the Peripatetics. Aristotle also spent ten years as the tutor of Alexander the Great, who said that 'Philip had given him life, but Aristotle had taught him to live well.' By the aid of this prince, the philosopher was enabled to produce his 'History of Animated Nature,' describing from collected specimens. He also wrote on physics, metaphysics, ethics, logic, rhetoric, and criticism. His canons on the latter subject are yet held in high respect. Compelled to leave Athens, Aristotle died at Chalchis, at the age of sixty-five.
Arithmetic, 593–604; mental, 601; logic of, 365.
Armada, the Spanish, 138.
Arms, or Armorial Bearings, in Heraldry, 46.
Army and navy of Britain, 184.
Arria, wife of the Roman Poetus, famous for stabbing herself, and saying, 'Oh, Poetus, it is not painful!' when her husband hesitated to free himself in the same manner from his woes.
Arúspices, Roman soothsayers, who pretended to foretel events by the inspection of the entrails of the animals sacrificed at the altars.
Ascanius, son of the Trojan Æneas, and successor to his power in Italy. The young inheritor and hope of a house or party is sometimes designated by this title.
Ash-Wednesday, festival of, 435.
Asia, general description and account of, 257–260.
Asia-Minor, ancient states of, 79.
Aspasia, a celebrated courtesan of Athens, mistress and ultimately wife of Pericles, and so eminent for her intellectual accomplishments that even modest women resorted to her to enjoy her instructive converse, 92.
Assertions and propositions, in Logic, 356.
Association, law of, in metaphysics, 330; in Phrenology, 352.
Assurance-Life, 524–528.
Assyrians, the ancient, 77; antiquities, 676.
Astræa, the goddess of Justice in the classical mythology, 87.
Astronomy, logic of the science, 367.
Atalanta, a princess of the isle of Scyro, of great beauty, and determinedly averse to matrimony. As she excelled in running, she consented to wed him who foiled her in a trial of speed, and defeated all her lovers, until one came forward who was favoured by the goddess of Love. From that deity he received three golden apples, and was directed to throw them down at intervals in the race. The stratagem succeeded. Atalanta could not refrain from stopping to pick up the apples, and the lover obtained her hand. But for subsequent disrespect to Jupiter, the pair were changed into a lion and lioness. The race of Atalanta is often alluded to.
Athens, history of, 90, 94.
Athos, a mountain of Macedonia, which a sculptor proposed to cut into a vast statue of Alexander the Great.
Atlas, a Titan or giant who warred with Jupiter, and was ultimately changed into the mountain, or chain of mountains, of the same name in Africa, which, from their height, were supposed to support the heavens. Hence the frequent allusions to the load of Atlas, 274.
Atmospheric illusions, 430.
Atreus, king of Argos, who, having cause of offence against his brother Thyestes, caused the latter unwittingly to eat the flesh of his own children. The son of Thyestes revenged this deed by slaying Agamemnon, the son of Atreus.
Atropos, one of the Fates, or Parcæ, whose task it was to cut the thread of life.
Attachés (Fr.), a term applied to certain unofficial parties connected with or attached to an embassy; see diplomacy, 45.
Attica, a district of Greece, lying south of Bœotia, and west of the Ægean Sea. It was supposed to be so peculiarly favourable to genius, and its dialect to be so pure, that the phrase of 'Attic wit' or 'salt' became indicative of the highest literary merit, as garrets got the name of 'Attics' from writers being too often the inhabitants of such poor places in times not far distant.
Atticus, an intimate friend of the orator Cicero, and a man pre-eminently distinguished by the superior qualities of his head and heart.
Augeas, king of Elis, whose vast stables for oxen and goats were so overrun with filth, that it was deemed impossible to cleanse them, until Hercules effected the task by turning a river into them. Difficult cases of purification or reformation are proverbially compared to this Herculean feat of cleaning the Augean stables, 82.
Augurs, Roman soothsayers, who pretended to foretel events by the flying, singing, and feeding of birds.
August, festival Calendar for, 443.
Aurora, the goddess of the Morning, usually represented as drawn by two horses in a rose-coloured chariot. She was called sister to the sun and moon, and mother of the winds and stars.
Australasia, description and account of, 282–288.
Australia, colonies of, 284.
Austria, description of, 201.
Autograph (Gr. *autos*, self, and *grapho*, I write), a piece of writing in one's own hand.
Avarice, as a mental desire, 334.
Aventinus, one of the seven hills on which Rome was built; Aventine mount.
Avernus, a lake of Campania, so unwholesome and putrid that the ancients made it the entrance of the infernal regions.

Babel, Babylon, in Ancient History, 76.
Babylonians, the ancient, 77; Babylon, 78.
Bacchantes, priestesses of Bacchus, who did honour to the god of wine by the most frantic and licentious orgies, 86.
Bacchus, god of wine, son of Jupiter by Semele, who, being a mortal, fell a victim to her vain wish of seeing her lover in all the blaze of his divinity. Jupiter rescued her unborn child from the same fate, and placed him in his own thigh until grown to infant maturity. Bacchus, in his adult state, underwent many adventures, according to the poets. He made an expedition to India with his Bacchanalian followers, and made an easy conquest of the intermediate nations, teaching them the use of the vine. As Bacchus the conqueror, he is painted as drawn in a chariot by a lion and a tiger; and in other circumstances he is represented as a plump, smooth-skinned young man, with a crown of vine and ivy leaves, and a thyrsus or rod in his hand. His common names, besides that mentioned, are Iacchus, Liber, Bromius, Lyæus, and Evan. The rites in his honour were called Bacchanalia, 86.
Backgammon, game of, 662.
Baconian Philosophy—the Inductive Method propounded by Francis Bacon, Lord Verulam.
Bagatelle, game of, 666.
Bahamas, or Lucayos Islands, West Indies, 318.
Ball, games with, 656.
Ballet (Fr.), in theatricals, a representation of actions, characters, sentiments, and passions, by means of mimic movements and dances, accompanied by music.

Banco (Ital. a bench), in commerce, a bank, but commonly applied to the Bank of Venice; in law, the superior courts of common law are said to sit *in banco* during term.
Bankruptcy or insolvency, law of, 502.
Banks, origin of, 507; business of, 507; Bank of England, 508; joint-stock banks, 509; Scotch, 510; Irish, 512; savings', 512.
Barbadoes, island of, 317.
Barclay, Captain, his pedestrian feats, 645–647.
Baron and baronet, ranks of, 48.
Barrows, in Archæology, 679.
Bass or base, in Music, 738.
Bassoon, musical instrument, 766.
Bathos (Gr. *bathos*, depth), in rhetoric, a term applied to a ludicrous descent from elevated to mean.
Bavius and Mævius, two inferior and malevolent poets in the time of Augustus Cæsar, whose names have become a by-word for all envy of superior merit.
Bears' grease, how to make, 784.
Beauty, emotion of, in metaphysics, 333.
Beauty, theological considerations respecting, 380.
Belfast, description and account of, 254.
Belgium, description of, 204.
Beliefs, metaphysically considered, 335.
Belisarius, an able general of the Constantinopolitan emperor, Justinian, reduced to beggary in his old age, and afflicted with blindness. '*Date obolum Belisario*'—('Give the smallest coin to Belisarius'), the usual petition of the fallen soldier, has become proverbial.
Belize or Honduras, British settlement of, 297.
Bellérophon, a son of the king of Ephyre, who, having committed an act of violence, fled to the court of Prœtus, king of Argos, where the queen fell in love with him, and finding herself slighted, accused him to her husband. The latter sent Bellerophon to Lycia with sealed letters, desiring that the bearer should be put to death. The Lycian king sent his guest, with this view, against a monster called the Chimæra, but receiving from Minerva a winged horse called Pegasus, Bellerophon overcame the monster; and after other trials, ultimately wedded the daughter of the Lycian monarch. From this story, all letters unfavourable to the bearer have been called 'Letters of Bellerophon.'
Belles-Lettres, or Polite Literature, 689.
Bellona, sister and charioteer to Mars, the god of war.
Benevolence, sentiment of, in Phrenology, 344.
Berenice, a name borne by several Egyptian princesses, one of whom was noted for her beautiful hair, which was placed by her in the temple of Venus. Being lost, the locks were said by the court-astronomers to have been turned into a constellation.
Bermudas or Somers' Islands, 319.
Bible, the, History of, 385–394.
Biblia Pauperum, in history of printing, 705.
Bibliography (Gr. *biblion*, a book, and *graphō*, I write), literally the science of books. It is customary to speak of intellectual bibliography and material bibliography; the former implying the knowledge required to describe and arrange books according to the subjects of which they treat, and the latter a knowledge of the external peculiarities of books, their editions, &c.; but such a division is rather arbitrary than real, bibliography as a science comprehending all that appertains to the 'history of the book,' from the earliest to the latest times.
Bibliology (Gr. *biblion*, a book, and *logos*, discourse), a description or account of books; used synonymously with bibliography; the science which treats of books.
Bill of lading. See commercial terms, 501.
Billiards, game of, 663.
Bills of Exchange, 505.
Bills of mortality. See Mortality.
Birds, design in the structure of, 375.
Birmingham, description and account of, 219.
Births, statistics of, 546.
Bishop, origin of the term and office, 396.
Black letter, the old English or modern Gothic letter, introduced into England about the end of the fourteenth century.
Blacking, for shoes, &c. how to make, 779.
Bleaching, in domestic economy, 779.
Boadicéa (or Bondicea), queen of the Icenians, a tribe of South Britons, who took up arms to avenge the outrages of the Romans, but, in spite of her undaunted conduct in the field, was vanquished by them, and poisoned herself.
Bœotia, a district of Greece, now forming part of Livadia, and lying between Phocis and Attica. Partly from an idea that the atmosphere of the region was peculiarly thick, the inhabitants gained a reputation for stupidity, which has yet adhered to their name. Yet Pindar, Plutarch, and others of the brightest spirits of Greece, were Bœotians.
Bolivia, republic of, described, 309.
Bombay, description and account of, 271.
Boodhism, account of, 405.
Boreas, a title of the north wind.
Borghs, in Archæology, 679.
Bosphōrus, the early name for the Strait of Constantinople.
Bourgeois, a variety of type, in Printing, 709.
Bowls, games with, 653.
Brain, the, phrenologically considered, 337.
Brass and copper vessels, how to clean, 772.
Brazil, empire of, described, 311.
Breath, fetid, how to remove, 783.
Brevier, a variety of type, in Printing, 709.
Briareus, a famous giant, with fifty heads and a hundred hands, son of the Heaven and Earth.
Bristol, description of, 220.
Britain, History of, 129–176; constitution of, 177–192; resources of, 177–192; conquest of by the Romans, 129; conquest of by the Saxons, 129; conquest of by the Normans, 130; government of, 177; laws, 179; religion, 180; education, 181; finances of, 183; army and navy, 184; agriculture, manufactures, and commerce of, 185; public works, &c. 188; colonial possessions, 189; population of, 191; social statistics of, 191.
Britain, New, in North America, 292.
British constitution, character of, 42.
Broker, a somewhat indefinite term in commerce and mercantile law for one who contracts for the sale or disposal of goods belonging to other parties. Thus there are bill-brokers, stockbrokers, insurance-brokers, shipbrokers, pawnbrokers, and brokers who sell or appraise household furniture for rent. Brokerage is the term applied to a broker's remuneration, or per-centage.
Brutus (Lucius Junius), a noble Roman, who, in the days of the last king of Rome, feigned himself an idiot to insure his safety, but threw off the mask, and overturned the royal authority, when Lucretia fell a victim to the brutality of the son of Tarquin. When the sons of Brutus afterwards conspired to restore the Tarquins, he himself, as consul, was called upon to act as judge, and his high-minded victory over parental feeling has made his name immortal.—Brutus (Marcus Junius), descendant of the preceding, who emulated his virtues and his fame. When the power of Julius Cæsar became dangerous to the liberties of Rome, Marcus Brutus, though one of his warmest personal friends, rose against him, and united with Cassius and others in stabbing him in the Capitol. Cæsar, as he received the last blow, uttered to him who dealt it the memorable words, 'Et tu Brute!'—('Thou, too, Brutus!') The friends of Cæsar were avenged at Philippi, where the chief conspirators fell; and Plutarch tells that Brutus was forewarned of the event by the spirit of Cæsar, which appeared in his tent, and said, 'I will meet thee again at Philippi'—words often used to convey an indication of coming evil.
Bucéphalus, a horse tamed by Alexander the Great in youth, and which became so renowned for bearing him in the field of battle, as to give a common name to all spirited animals of its species.

Budget, a vidimus, or statement of the income and expenditure of a nation; usually applied to the annual parliamentary statement of the Chancellor of the Exchequer.
Bugs, how to kill, 774.
Bull, papal (Lat. *bulla*), an ordinance or decree of the pope, equivalent to a proclamation, edict, or order of any secular prince.
Bunions, how to remove, 784.
Burning, escapes from, 775.

Cadences or Closes, in Music, 760.
Cadet (Fr.), a pupil in a military academy, who object is to qualify himself as an officer. The chief military institutions in this country are Sandhurst for the British line; Woolwich for the artillery and engineers; and Addiscombe for the Indian army, both line and artillery.
Cadmus, a prince of Phœnicia, who generally receives the credit of inventing letters, or at least of introducing them into Greece. Though some writers ascribe the erection of Thebes to Amphion's music, others term Cadmus its founder. Ere he could do so, he killed a dragon which had devoured his companions; and from the teeth of this monster, when sown in the earth, a band of armed men sprung up. These fought among themselves, till only five were left to assist Cadmus in building the city. The sowing of the teeth and its consequences are often alluded to, and form an apt comparison when the germs of strife are planted in any instance, 82.
Caduceus, a rod entwined at one end by serpents, and which served as the rod of power and office of the herald-god Mercury, 87.
Cæsar, an illustrious name in history, first given as a surname to the Julian family of Rome. Caius Julius Cæsar, who gained for the family supreme power, was born in the year 100 B.C., and early distinguished himself by his eloquence, his captivating manners, and generous habits of life, 108–110.—Cæsar (Octavius, afterwards named Augustus), nephew of Julius Cæsar, and his successor in power, 109–111. The title of Cæsar is specially given to the first twelve emperors (commencing with the dictator, Julius Cæsar) who sat on the Roman throne. It was also assumed by later Roman emperors; and both the *kaisars* of Germany and the *czars* of Russia owe their designation to the same source.
Cairns, in Archæology, 679.
Calcutta, description and account of, 271.
Calendar, Key to the, 433–448.
Caligula, the fourth of the twelve Cæsars, who derived his name from his habitually wearing the *caliga* or military boot of the age, and made himself noted as a cruel and senseless tyrant. From mere wantonness he made his horse high priest and consul of Rome; and he spilt blood without cause and without remorse. He died a violent death, 111.
Calliopé, one of the Muses, 87.
Calotype or Talbotype, art of, 734.
Calvinists, the followers of Calvin, the second great reformer of the sixteenth century, and founder of the church of Geneva, 400.
Calypso, a beautiful goddess, who, according to Homer, dwelt on an island of the earth, and who received Ulysses hospitably as he wandered home from Troy.
Camera-obscura for photography, 733.
Camilla, queen of the Volsci, who fought against Æneas, and is described as having been so swift of foot that she could fly over a field of corn without bending the blades.
Campus Martius, a plain near Rome, used for the military exercises of the youth of the city.
Canada, description and account of, 293.
Candlemas-day origin of, 434.
Canon, in musical composition, 764.
Cape Colony, description and account of, 279.
Capital, in Political Economy, 496; in Commerce, 500.
Capitolium, the citadel of ancient Rome, founded on the Tarpeian Rock, and containing also a temple, from which Jupiter was named Capitolinus. The Capitol was a noble structure, occupying four acres of ground, and accessible by a hundred steps. The Romans held it in peculiar veneration, and it was the scene of all their triumphal processions. By the cackling of geese the Romans were once roused to the protection of their Capitol, and this is often alluded to when slight means serve great ends.
Cards, various games with, 666–671.
Carpets, purchasing, 769; cleaning, 771.
Carriers, laws relating to, 501.
Carthage, a great maritime and republican city of Africa, founded about 900 years B.C. by the Phœnician princess Dido, and long the rival of Rome. Carthage existed for upwards of 700 years, and possessed during its palmy days a great part of Africa on the Mediterranean, as well as Spain, Sicily, and Sardinia. Its generals, and particularly Hannibal, pressed Rome so severely, that Cato, one of the wisest of the Romans, pronounced its destruction indispensable. His words, '*Delenda est Carthago*' ('Carthage must be destroyed'), have become proverbial. The power of the African republic was at last overthrown by Scipio Africanus, and the city ruined by fire. The Romans, in their hate, used to call the Carthaginians all that was treacherous; and from one of the names of the latter people, *Punica fides* (Punic faith) was made by their foes a lasting synonyme for 'faithlessness,' 102–106.
Cartouche, example of, in Archæology, 675.
Cassandra, a Trojan princess, who is said to have received the gift of prophecy from Apollo; but having afterwards slighted the god, was doomed by him to have all her predictions disbelieved. When she foretold the fall of Troy, accordingly, she was deemed insane. An unheeded prognosticator of evil is hence termed a Cassandra.
Castalia, a Parnassian fount, sacred to the Muses, and a fertile theme of poetical allusions.
Castor, son of Leda, whom the enamoured god Jupiter is said to have wooed in the form of a swan. Leda bore at once two sons and two daughters—Castor, Pollux, Clytemnestra, and Helena, of whom the second and fourth were deemed children of Jupiter, and the other two of the husband of Leda. Pollux, on being elevated to a star, exhibited his love for Castor by seeking for the latter a share of his immortality, and it was granted to them to live six months alternately.
Cathedrals and cathedral cities of England, 224.
Catholic Church, the Roman, 399.
Catilina (Sergius), a noble Roman of great talents, but infamous character and habits. To gratify his ambition, avarice, and revenge, he rebelled against his country, but was overcome and slain in battle. The name of Catiline is used to express all that is evil in the character of a conspirator and liberticide, 108.
Cato, a name borne by several illustrious Romans. Cato, surnamed the Censor, was famous for his valour, temperance, wisdom, and eloquence. He studied and acquired the Greek tongue at the age of eighty. Fragments of his compositions yet exist.—Cato, surnamed Uticensis, was the great-grandson of the Censor, and made himself celebrated by his patriotic resistance to the usurpations of Julius Cæsar, to avoid falling into whose hands he ultimately stabbed himself, after reading Plato on the Soul's Immortality, 108.
Catullus, a Roman poet, whose pieces have much sweetness and feeling, though occasionally marked by immorality.
Caucasian variety of mankind, physical and mental characteristics of, 1; history of, 68.
Causality, faculty of, in Phrenology, 350.
Cause and effect, in Logic, 359.
Cautiousness, in Phrenology, 344.
Caxton, William, his connection with the introduction of printing in Britain, 707.

Celtæ or Celts, in Archæology, 677, 681.
Celtic family, characteristics of, 3.
Censors, two important Roman magistrates, who had the care of the manners and morals of the people.
Centauri, a monstrous people of Thessaly, described as having the head, chest, and arms of men placed on the trunks of horses. A band of them being invited to a wedding-feast of the Lapithæ, a quarrel ensued, and a fearful battle took place, in which Hercules and Theseus peculiarly distinguished themselves in combating and defeating the Centaurs. Many sculptors, from the Greeks to the moderns, have used the chisel on this subject, which is indeed rich in the picturesque. The first use of horses for riding seems to have originated the fable of the Centaurs, but Pliny actually states that he saw one embalmed!
Central America, states of, described, 304.
Cephalus and Procris, a wedded pair, who, having each tried the other's fidelity by disguises, found that human nature is frail, and became content and happy. But Procris, uncured of jealousy, followed her husband one day to the chase, and was accidentally slain by him. The story of these lovers is often told and alluded to by the classical poets.
Cerberus, a dog with three heads, guardian of the infernal gate. Watchdogs, nay, guardian bipeds, frequently receive this name.
Ceres, the goddess of corn and harvests, daughter of Saturn and Vesta. She was worshipped everywhere for her bounties, having taught Triptolemus of Eleusis all the arts of agriculture, and sent him to disseminate them over the earth. At Eleusis, she also established the famous rites called the Eleusinian Mysteries, 87.
Chaos, the rude, shapeless mass of matter composing, according to the ancients, the yet unformed universe.
Chapel, in Printing, 715.
Charge-d'affaires (Fr.), in diplomacy, 45.
Charlemagne, his career, 115–118.
Charon, the ferryman who wafted the dead over the river Styx into the regions below. As the boatman demanded a 'consideration' for his services, it was customary for the ancients to place a small coin below the tongues of the dead.
Charybdis, a deep whirlpool in the Sicilian seas, opposite to the rock Scylla. The combined dangers of both led to the well-known saying—'*Incidis in Scyllam, cupiens vitare Charybdim*'—('Shunning Charybdis, you on Scylla strike'), which is familiarly applied in the same sense as the Scottish proverb, 'Out of the frying-pan into the fire.'
Chemistry, logic of the science, 367.
Chess, game of, 657–661; ancient chessmen, 686.
Chester, city, description and account of, 221.
Chevron, a term in heraldry, 47.
Chilblains, how to remove, 784.
Chili, description and account of, 309.
Chimæra, a fabled monster killed by Bellerophon, which had a triple head, composed of those of a goat, a lion, and a dragon, and which breathed flame. Any monstrous thing of fancy is now termed a chimæra.
Chimney on fire, how to extinguish, 775; smoky, how to cure, 777.
Chinese language, 32; history, manners, religion, literature, &c. 67.
Chivalry, institution of, 121
Chords, classification of, in Music, 745; progression of, 746; derived from the dominant, 751.
CHRISTIANITY, HISTORY OF, 394–400.
Christmas-day, festival of, 447.
Chronicle (Gr. *chronos*, time), a historical register of events in the order of time.
Church of England, 180; of Ireland, 180; of Scotland, 181; the statistics, &c. of.
Churches, the Roman Catholic, the Eastern, Protestant-Episcopalian, Presbyterian, &c. 399–400.
Cicero (Marcus Tullius), an orator of Rome, whose speeches against Catiline, Antony, and others, remain imperishable monuments of his powers. His eloquent denunciations saved Rome from the tender mercies of Catiline, and he was termed by the people *the father of his country*. After serving the state in the highest situations at home and abroad, and suffering exile for his attacks on the bad, he took the side of Pompey against Cæsar; but the latter, on becoming victor, treated Cicero with much respect. However, when Cæsar was slain, Antony, the bitter foe of the orator, acquired a fatal degree of power. At length Antony despatched assassins on the track of Cicero, and soon after his bleeding head was brought to Rome, where the wife of the master-murderer tore out the once persuasive tongue in remorseless spite.
Cicerone (Ital.), an individual who acts as a guide or pointer out of interesting objects to travellers.
Cimmerian, a local epithet for the natives of the district now called the Crimea, and some parts of which were thought to be so dark, that 'Cimmerian gloom' has become a proverbial phrase.
Cincinnatus, an illustrious Roman, who was taken from the plough, which he left with regret, to serve and save his endangered country. His task fulfilled, he again contentedly retired to his farm.
Circé, a witch of semi-divine origin, whose irresistible enchantments drew many into her power, only to be changed, after a short career of voluptuousness, into filthy swine. Circé is evidently an emblem of debasing pleasure.
Circle, properties of the, in Geometry, 610.
Circumcision, festival of, 433.
Circus, the place where shows were exhibited at Rome.
Cities, historically and socially considered, 38.
Civil society, construction and constitution of, 38.
Civility, duty of, 456.
Clarionet, musical instrument, 766.
Classic (Lat. *classis*, a class). The highest class among the Romans were denominated, by way of pre-eminence, *classici*; hence the application of the term to authors of the highest or first class, whose works are regarded as models or authorities. A writer is therefore said to be *classical* if public opinion has placed his productions in the first class; and a painting is said to be *classic* when its arrangement is such that all the parts or accessories are suitable to the general design.
Cleanliness, duties regarding, 450.
Cleopatra, a name borne by several princesses of Egypt, and rendered particularly famous by one whose surpassing beauty enslaved Mark Antony, and led to his ruinous contention with Cæsar Augustus. When Antony fell, Cleopatra applied an aspic to her breast, and died from its venomous bite, 110.
Clients and Patrons, in Roman History, 98.
Climax (Gr. *climax*, gradation). In rhetoric, an ascent from the least important object or proposition to that which is calculated to make the greatest impression on the mind of the hearer or reader. Anticlimax is the term employed when the ideas sink in succession: nearly the same as bathos.
Clio, the Muse who presided over history, 87.
Cloacina, a goddess to whom the Romans assigned the care of all the refuse of their city: see also Cloacæ, Vol. I., 476.
Closes, or Cadences, in Music, 760.
Cloth, incombustible, 780.
Clotho, one of the Fates, who held the distaff from which was spun the thread of life, 87.
Clyde, scenery of the, 232.
Clytemnestra, wife and murderess of Agamemnon, and the victim of her own son's revenge.
Cockroaches, how to destroy, 774.
Codrus, an Athenian king, who, prompted by an oracle, gave up his life to save his country, 85.
Colloseum, a gigantic amphitheatre at Rome. See vignette to No. 57.
Colonial possessions of Britain, statistics of, 189.
Colossus, a brazen image placed with its feet on the

two moles of the harbour of Rhodes, and of such magnitude, that ships passed easily between its legs. The term colossal has become firmly established in modern languages.
Combativeness, in Phrenology, 341.
Comitiæ, public assemblies of Rome, 98.
COMMERCE, 497–503.
Commercial statistics of Britain, 185–187.
Commons, constitution of the House of, 177.
Company, see commercial terms, 499.
Comparison, faculty of, in Phrenology, 350.
Composing, in letterpress-printing, 710.
Composition, law of in animated nature, 379.
Concentrativeness, in Phrenology, 340.
Concertina, a musical instrument, 768.
Conjunction, in Grammar, 580.
Connoisseur (Fr. *connaître*, to know), originally applied to one versed in the fine arts; but now employed indiscriminately to one well acquainted with any particular object or study.
Conscientiousness, in Phrenology, 345.
Consonants, various classes of, 19.
Constantinople during the Middle Ages, 125.
Constructiveness, in Phrenology, 342.
Consul, the highest Roman magistrate. This office was held annually and conjunctly by two individuals, who conducted the wars of the state, presided over the senate, and held, in short, nearly absolute power.
Consumption, nature and design of, in Political Economy, 494; different kinds of, 495.
Contiguity, the law of, in metaphysics, 328.
Contraband (Ital. *contra*, against; *bando*, a proclamation), in commerce, goods exported from, or imported into, a country against its laws; smuggled, in common language.
Contralto (Ital.), in Music, 738.
Corinth, a famous city of Greece, situated on the isthmus between the Gulfs of Ægina and Lepanto, and remarkable in classical times for its power and opulence. *Corinthian brass* is frequently alluded to, and is said to have been an alloy accidentally formed when the city was burned by the Romans in the second century, A.D. The common adage, '*Non cuivis homini contingit adire Corinthum*'—('It is not every man's luck to visit Corinth'), is supposed by Suidas to refer to its difficulty of access by sea.
Cork, city, description and account of, 251.
Cornelia, a noble Roman lady, who, though her sons were put to death for their turbulence, was so proud of them that it was her boast to be simply named 'The mother of the Gracchi,' 104.
Corno or French-horn, 767.
Cornopean or Cornet-à-piston, 767.
Corns, how to remove, 784.
Coronet, literally, a little crown, in heraldry, 47.
Corsellis, first printer in England, 707.
Corydon, a name in Virgil's pastorals, often applied to shepherds.
Coryphæus (or Choryphæus), a title formerly given to the leaders of choral bands, and now frequently assigned to leading men of any description.
Cosmetics, in personal economy, 784.
Counterpoint, in musical composition, 762, 764.
Counter-tenor, in musical composition, 738.
Courtesy and respect, duty of, 457.
Courts of law, English, 60; Scotch, 63.
Covenant, the National, of Scotland, 141.
Coventry, description of, 219.
Cowry (Germ. *kouri*), a small shell of the genus *cypræa*, used in Africa, in India, and the Indian islands in lieu of coin in smaller payments: one hundred are equivalent to a penny, 503.
Cream, cold, recipe for, 784.
Credit, nature of, in Commerce, 500.
Crete.—The island of Crete was chiefly renowned of old for its labyrinth, laws, luxury, and lies. The name of a Cretan, indeed, became a byword for falsehood.
Cribbage, game of, 669.
Cricket, practice and rules of, 651–655.
Crime, statistics of, 559; in Britain, 192.
Criticism (Gr. *krino*, I judge), in rhetoric, the art of judging with propriety concerning any object or combination of objects; usually limited to literature, philology, and the fine arts.
Crœsus, a king of Lydia, supposed to be the richest of mankind, and desirous of being thought the happiest. Solon, the Athenian philosopher, told him that wealth did not insure happiness, and that no man could be safely called happy before death. Crœsus disliked this plain speaking, but when overcome by Cyrus, and led out to execution, he acknowledged aloud its truth. Cyrus, struck himself by the circumstance, pardoned him.
Cromlechs, in Archæology, 683.
Cromwell, his career, 144–147.
Cross-hatching, in Engraving, 723.
Crotchet, in musical time, 739.
Crusades, the, 119–124.
Cuirass (Fr. *cuir*, leather), a covering for the breast, originally made of leather, but now of quilted linen, woollen, steel-plate, or any other material.
Cultivation, self, as a mental desire, 334.
Cupid, god of Love, and son of Venus, queen of Beauty. He is represented as a winged boy, naked, and armed with a bow and arrows.
Curiosity metaphysically considered, 334.
Curling, game of, 649; laws for, 650.
Currency of the United Kingdom, 188, 507.
Customs, and custom-house, in Commerce, 502.
Cutlery and other hardwares, in household economy, 770.
Cybelé, a goddess worshipped with many mystic rites, and usually painted with a turreted crown, keys in her hand, and a lion-drawn chariot.
Cyclops, a race of one-eyed giants, who acted as assistants to the smith-god Vulcan, and devoured human beings.
Cymbals, in Music, 768.
Cynic (Gr. *kuōn*, a dog), a Greek sect of philosophers, so called from their snarling humour, and disregard of the conventional usages of society.
Cyprus.—The island of Cyprus, from its luxurious fertility, was supposed to be the residence of the goddess of Beauty and Pleasure, and from this cause the epithet 'Cyprian' has acquired a licentious meaning.
Cythera, an islet off the Morea, sacred to Venus, and from which she is often called Cytheræ, or the Cytherean goddess.
Czar or tzar (*Cæsar*), the title given to their monarch or emperor by several Slavonic tribes.

Dædălus, an Athenian of great skill in the mechanical and fine arts, to whom some ascribe the invention of the wedge, the axe, the wimble, and the level. He is said also to have formed the many-pathed labyrinth of Crete, in which he himself was ultimately confined with his son Icarus. Not being able to get out of his own trap, he made wings for himself and Icarus, with which they flew away; but the too-daring youth rose so near the sun that the waxen fastenings of the wings melted, and he fell into the sea. Dædalus is the nominal prototype of all ingenious mechanics.
Daguerreotype, art of, 733.
Damocles, a courtier, who, having loudly flattered Dionysius of Sicily on the score of his wealth and fortunate greatness, was placed for a time, by way of trial, upon the tyrant's throne. Damocles gazed a while with delight on the splendour around him; but, looking up, he saw a sword suspended above his head by a single hair, and his fancied happiness vanished. This incident is often referred to in illustration of the perils and turmoils of greatness.
Damon and Pythias, two friends of such constancy, that when the former of them was doomed to die, and sought for a respite, that he might go home and settle his affairs, the latter offered his life as a

security for the return of the other. Damon returned, even to his friend's regret. The scene betwixt them was so moving that it led to a pardon.—Damon is a common name for a swain, being much used in the old pastorals.
Danaë, the daughter of a king of Argos, was shut up in a tower because it was foretold that a son of hers should kill his grandfather. The god Jupiter, however, introduced himself in the form of a golden shower, and Danaë bore to him Perseus, with whom she was exposed at sea in a slight bark, and who afterwards accidentally killed his grandfather with a quoit.
Danaides, the fifty daughters of King Danaus, who, to prevent the fulfilment of an oracle of fatal import, caused them to murder their husbands. All obeyed but one; and, for the crime, they were condemned perpetually to the fruitless task of filling a sieve with water in the infernal regions.
Dancing, as an amusement, 671.
Daphné, a nymph, who, when flying from the enamoured pursuit of Apollo, was converted into the laurel-tree.
Daric, a Persian gold coin of about 130 grains; so called from Darius, the name of several of the Persian kings: there were also silver Darics.
Deacon (Gr. *deaconos*, a servant), one of the orders of the Christian church, to whom originally the administration of charity was committed; an assistant or servant to the priest or minister, 396.
Deaths, statistics of, 549.
Debenture (Lat. *debeo*, I owe), in Commerce, 502.
December, festival Calendar for, 447.
Definitions, importance of, in Logic, 358.
Delegate (Lat. *delego*, I choose from), one chosen, and sent by another to act as his representative; a deputy.
Delphi (now Castri), a town of Phocis, situated on the side of Mount Parnassus. The place was especially sacred to Apollo, both as the god of Poetry and Divination, and here stood the most famous of the Greek temples and oracles, 88.
Delphin.—In bibliology, a term applied to the edition of the Latin classics, prepared and commented upon by thirty-nine of the most famous scholars of the day, at the suggestion of Louis XIV., king of France, for the use of his young son the dauphin (*in usum Delphini*), under the direction of his governor Montausier, and his preceptors Bossuet and Huet.
Democracy (Gr. *demos*, the people, and *kratio*, I govern).—That form of government in which the whole or majority of the adult population have a voice in the election of their rulers or representatives.
Democritus, a personage called the Laughing Philosopher, from his deeming it better to smile than to weep at the follies of mankind.
Demonology. See Superstitions, 417–432.
Demosthenes, the greatest of the ancient orators.—An Athenian by birth, he was early seized with an ardent desire to excel in speaking; and though he had many natural disadvantages to contend with, he overcame them all. He cured a habit of stammering by placing pebbles in his mouth; he inured himself to the turbulence of a popular auditory by speaking on the sea-shore during storms; and he removed the distortions of his visage by delivery before a mirror. He shut himself up, moreover, to indulge in study; and over the midnight lamp were composed those sublime orations which yet remain without parallel, and by which he wielded at will the fierce democracy of Athens. His greatest efforts, when he had raised himself to power, were directed against Philip of Macedon; and from the title given to his harangues on this subject, similar attacks are yet commonly termed Philippics. The Macedonians ultimately triumphed, however, and Demosthenes escaped from his enemies by taking poison in the sixtieth year of his age.
Denmark, description of, 205.
Depilatories (Lat. *pilus*, the hair), composition of, 784.
Derby, town of, 219; Derbyshire scenery, 214.
Derivation of words, in Grammar, 586.
Dervise (Persian, *poor*), a term applied to certain Asiatic fanatics, who, like the monks of Christendom, either live in a body solitarily as hermits, or wander about as mendicants.
Desires of the human mind, 334.
Despotism, despotic government, 41.
Destructiveness, in Phrenology, 341.
Deucalion, a prince of Thessaly, who, with his wife Pyrrha, escaped, by means of a ship, from a great deluge said to have occurred in their time. The vessel rested on Parnassus, and Deucalion, directed by an oracle how to repeople the earth, threw stones over his shoulder, which instantly became men. Pyrrha did the same, and women were formed.
Diana, sister of Apollo, goddess of hunting, and in heaven called Luna, or the Moon. She was represented in the garb of a quivered huntress followed by dogs, and was a renowned patroness of maiden chastity, though she is said to have fallen in love with Endymion, a young man of Latmos, as he lay asleep, and even to have wedded him. She had eighty nymphs who attended her in the chase. The most famous temple of Diana was that at Ephesus, called one of the seven earthly wonders, and set fire to by one who sought thereby to gain an immortal name. Diana is often called Cynthia, or Delia, from the place of her birth; and in the character of the moon, is usually termed Phœbe, 87.
Dido, a Phœnician princess, who founded Carthage, and while it existed, was worshipped in that city. Æneas, after wooing Dido, deserted her, and her memory has become associated with the idea of a forlorn woman.
Digit (Gr. *digitos*, a finger), in mensuration, a finger's breadth $=\frac{3}{4}$ of an inch; in arithmetic, the numerals under 10; in astronomy, the twelfth part of the diameter of the sun or moon, employed in measuring the extent of an eclipse.
Dilletante (Ital.), an admirer of the fine arts; one who delights to promote the sciences or the fine arts.
Diogenes, the type of all sour, snarling philosophers. He was of the Cynic sect, and so despised luxury as to live in a tub. Many of his sayings are frequently quoted; as, for example, his answer to Alexander the Great, when that prince asked him what he could do to oblige him. 'Stand away from betwixt me and the sun,' said Diogenes.
Dionysius (the elder), tyrant of Sicily, who, amongst other characteristic deeds, constructed a cave commonly called 'The Ear of Dionysius,' which was of such a form that every word uttered by his prisoners in an adjoining prison could be heard by him.—Dionysius, son and successor of the preceding, and so apt an imitator of his cruel practices, that he was finally driven from his throne, and, to earn his bread, was compelled to teach a school at Corinth, whence fallen despots are often compared to him.
Diploma (Gr.), a document on paper or parchment, conferring power, authority, privilege, or honour. Surgeons, clergymen, and other professional parties, receive diplomas from their respective faculties. Diplomacy, from the same root, refers to the customs, rules, privileges, and forms of negotiation between state and state, as observed by their respective agents.
Diplomacy, international, nature of, 45.
Diseases, statistics of, 550.
Dispensary, the Provident, 542.
Distemper, in ordinary language, a diseased or morbid state of an animal body; an undue or unnatural temper of mind. In painting, the mixing of colours with something besides oil or water.
Distribution, in Political Economy, 489.
Division, in Arithmetic, 596; in Algebra, 605.
Dodona, a town of Epirus, and the site of an oracle of Jupiter, whose responses were frequently delivered by or among the sacred oaks of the neighbourhood.

Domestic relations and duties, 469.
Dominica, island of, 317.
Domitian, a Roman emperor, proverbial for his cruelty.
Draco, a lawgiver of Athens, whose statutes were so severe, that it was said they were written in blood. Harsh edicts are often compared to them.
Drama, the nature of, 703.
Draughts, game of, 661.
Drawing, 625–638.
Dreams, superstitious belief in, 430.
Druidical temples, 215, 683.
Dryades, nymphs fabled to preside over the woods, 87.
Dublin, description and account of, 248.
Duenna (Span.), the name given to the chief lady-in-waiting upon the queen of Spain; generally familiarly applied to ladies who attend others in a capacity somewhat between a governess and companion.
Dulcimer (Lat. *dulce*, sweet), 768.
Dundee, description and account of, 239.
Duns, in Archæology, 679.
Duties of Life, Private, 449–464; Public and Social, 465–480.

Earl, a British title of nobility, 48.
Earth, design in the structure of, 373.
Earthenware and china, in house-furnishing, 770; how to mend, 780.
Easel, the frame on which painters place their canvas.
Easter, in the Romish calendar, 439.
Echo, a nymph whose powers of speech, as a punishment for prating, were limited to the answering of questions. Falling afterwards in love with Narcissus, that youth's cruelty caused her to pine away, and she was changed to a stone, which still retains the power of speech.
Economics, Social, 529–544.
Economy, Political, 481–496.
Ecuador or Equator, republic of, 308.
Edinburgh, description and account of, 236.
Education, as a Science, 561–576; statistics of, 557; physical education, 561; moral, 562; intellectual, 568; industrial, 575; mechanism for education, 573; in England, 181; in Ireland, 181; in Scotland, 182.
Egeria, a nymph or deity, from whom Numa, king of Rome, pretended to receive counsel in secret on affairs of state.
Egypt and Egyptians, ancient, 71; modern, 275; antiquities, 673; pyramids, 674; hieroglyphics, 675.
Electors, our duties as, 467.
Eleusis, a city of Attica, the chief scene of the celebration of the Eleusinian Mysteries, 67.
Elizabeth, government and character of, 137.
Elysium, the happy seat of the departed spirits of the good, according to the Greeks and Romans, 88.
Emotions, of the human mind, 331.
Empedocles, a man of superior talents, who, wishing to be deemed a god, leapt into the crater of Ætna, thinking that he might so conceal his having been subject to death like common mortals. But his sandal was thrown up, and frustrated his insane ambition.
Emporium (Lat.), originally and properly the town in which the trade and commerce of a district centres; now applied to any place of merchandise. In pathology, the common sensory of the brain.
Emulation, duties regarding, 462.
Endymion, a youth of Latmos, beloved of the moon; in frequent use by the poets.
England, History of, see History of Great Britain and Ireland, 129–176; description of, 209–224; superficial features, 209; geology, 209; hydrography, 210; climate, 211; botany and zoology, 210; population, 212; national industry, 213; government, 213; scenery, 214; antiquities, 215; cities and towns, 216; church of, 180.
Engraving, 721–731; on wood, 721; on steel and copper, 726; on gems and seals, 730.
Enharmonic transition, in Music, 789.
Envy, crime of, 462.
Epaminondas, a Theban chief, one of the most noble characters in Grecian history. A great and victorious soldier, he was even more conspicuous for virtue, wisdom, temperance, and patriotism.
Epic poetry, nature of, 702.
Epicurus, a celebrated philosopher of Attican descent, whose name has most unfairly become a synonyme for a sensualist of a gross kind. His philosophy was certainly based on the maxim that 'Pleasure is the highest good;' but Epicurus well knew, and ever taught, that moderation in the gratification of the senses is the sole means of attaining to true and lasting pleasure; and that a 'happy life' rests fundamentally on health of body and tranquillity of mind, possessions never to be won or preserved by excessive sensual indulgence. What propriety is there in a word of such etymology as the word 'epicure,' when the daily diet of the man whose name is so abused consisted of 'barley-cake and water from the spring!'
Epigram.—This term (Gr. *epigramma*) originally merely signified an *inscription*, and from this use the poetry so called derived its prevailing character. The Greek epigram served alike for mottoes, mementos, panegyrics, or epitaphs; now the epigram is expected to possess a certain smartness of manner and sharpness of point and wit, 691.
Epiphany, festival of, 433.
Equations, in Algebra, 607.
Equity, law of, in England, 58.
Erăto, the Muse who presided over amorous verse.
Erĕbus, an infernal deity, whose name is often used to signify the supposed place of his abode.
Erotic (Gr. *erōs*, the principle of love), a term applied to certain kinds of amatory songs or poems.
Esoteric (Gr. private), an epithet applied to the private instructions and doctrines of Pythagoras—*exoteric* being the term applied to such as were openly professed and taught.
Etching on copper, 726; on steel, 728; on glass, 729; on stone, 732.
Ethics—Moral Philosophy, 383.
Ethiopic or African variety of mankind, physical and mental characteristics of, 4; history of, 65.
Ethnology, 1–16.
Etymology, in English Grammar, 577.
Euclid, analysis of his 'Elements,' 617–624.
Euripides, a Greek poet, whose tragedies are marked by great tenderness and elegance.
Europa, a beautiful woman, to whom the enamoured Jupiter appeared in the form of a bull, and when she thoughtlessly mounted on the back of the supposed animal, carried her off. She gave name, it is further fabled, to the European continent.
Europe, General Description of, 193–206.
Eurydicé, wife of the poet and musician Orpheus. When she died from the bite of a serpent, Orpheus was so deeply grieved that he ventured to seek her among the shades; and having, by his music, drawn 'iron tears down Pluto's cheek,' was permitted by the infernal chief to take his wife back to earth, on condition that he did not turn to look on her till his arrival there. He violated the condition, and lost her for ever.
Evangelists, the four, 368.
Eventuality, organ of, in Phrenology, 349.
Evils, our duty regarding, 474.
Exchange, in Political Economy, 487.
Excise duties, in Commerce, 502.
Exoteric. See Esoteric.
Exports and imports of Britain, 187.
Extravaganza (Ital.): in music, any composition remarkable for its incoherence and wildness.

Fabius, the name of a noble Roman house, the most illustrious member of which was Quintus Fabius Maximus. The alarming successes of the Carthaginian, Hannibal, who defeated in succession all who came against him, received a notable check when

Fabius took the command of the Roman army. His policy was not to fight, but to wear out Hannibal, then in a hostile country; and from this circumstance Fabius received at the time the name of *Cunctator*, 'The Delayer or Hesitator.' Ever since that age, every cautious commander has been called a follower of the Fabian policy.
Fairies, account of the, 420.
Falkland Islands, settlement of, 313.
Fallacies, in Logic, 363.
Falsehood and truth, duties regarding, 455.
Falsetto (Ital.): a musical term, signifying a false voice or artificial manner of singing, produced by tightening the ligaments of the glottis, and thus extending the vocal compass about an octave higher. The natural voice, or voice from the chest, is termed *voce di petto*.
Faröe Islands. See Denmark, 205.
Fathers, the Christian, 397.
Faunalia. See Lupercalia.
Fauns.—The Fauns were minor rural deities, painted as having the form of goats from the middle downwards, with the horns and ears of the same animals.
Faust or Faustus, his connection with the invention of printing, 705–706.
February, festival Calendar for, 434.
Feet, the, in personal economy, 784.
Female sex, honour to, 457.
Fetishism, account of, 401.
Feudal system, origin of, 116.
Fiddle or violin, in Music, 765.
Fief (Fr.), in feudal law the name for an estate in lands held off a superior, 54.
Fife, musical instrument, 766.
Filters, for water, 778.
Fire, escapes from, 775; how to light, 776.
Firmness, sentiment of, in Phrenology, 345.
Firms. See commercial terms, 499.
Fishes, design in the structure of, 375.
Fitness, emotion of, in Metaphysics, 333.
Flageolet, musical instrument, 766.
Flies, how to destroy, in Household Economy, 775.
Floors, wooden, how to clean, 771.
Flora, a goddess of the Roman Pantheon, who presided over flowers, gardens, orchards, and vineyards, and was usually painted as crowned with flowers, and holding the horn of plenty. She married Zephyrus, the god of the west wind, and received from him the privilege of immortal youth.
Florin (Fr.), a name given to different silver coins current in several continental countries, especially in Germany and Austria; the name also given to the two-shilling piece recently coined in Britain. In Austria, the florin is equal to 2s. 0½d.; in Holland and Western Germany, 1s. 8d.; in Poland, 6d.; and the Rhenish gold florin is equal to 6s. 11d.
Flowers, how to preserve fresh, 782.
Flute, musical instrument, 766.
Folio (Lat.), a printer and bookbinder's term, 711.
Food, duties regarding, 460.
Foot-ball, game of, 655.
Form, organ of, in Phrenology, 347.
Forts, vitrified, in Archæology, 679.
Forum, the market-place, and also the seat of a prætorian court of justice in the Roman cities. The word is now applied to courts of justice, whence the phrase of 'forensic' or legal oratory.
Fount, an assortment of types, in Printing, 709.
Fractions, in Arithmetic, 599; in Algebra, 606.
France, description of, 193.
French-horn or Corno, in Music, 767.
Friendly societies, 533–536.
Fugue, in musical composition, 764.
Fumigation and ventilation, 776.
Funds, minor economic, 544.
Furiæ, the three Furies, named *Alecto*, *Megæra*, and *Tisiphone*. These sisters were supposed to be the ministers of Divine vengeance, punishing mortals on earth both with external evils and the stings of conscience, and inflicting continued torments on the bad in the infernal regions, 67.
Furniture and house-furnishing, 769; how to clean, 778.

Galatea, a sea-nymph, in love with Acis, whom Polyphemus the Cyclop killed through jealousy.
Gall, founder of phrenology, 337.
Ganymedes, a beautiful Phrygian youth, carried away by Jupiter to be the cup-bearer of the gods in place of Hebe. An eagle conveyed him, and he is usually pictured on the back of that bird.
Gaul, invasion of Rome by, 99.
Gentility, what it is, 458.
Geometry, Plane, 609–624; solid, 620; spherical, 622; logic of, 336.
Germanic family, characteristics of, 2.
Germany, geographical description of, 202.
Geryon, a monstrous being with three heads, slain by Hercules.
Ginger-beer, recipe for, 780.
Gladiatorii Ludi.—Gladiatorial sports, so called from *gladius* (a sword), were exhibitions at which slaves, captives, and trained fighters, butchered one another for the amusement of the people of Rome.
Glasgow, description and account of, 237.
Glass and crystal, in house-furnishing, 770; how to cut, 780.
Glyphography, art of, 729.
Gnome (Gr. *gnomon*, an interpreter): an imaginary being, supposed to inhabit the inner parts of the earth. The Gnomes are represented as of small stature, and are supposed to be the guardians of mines, caverns, &c.
Golf, ancient game of, 653.
Good-Friday, festival of, 437.
Gordius, a Phrygian peasant, who, when his countrymen were told by the oracle to enthrone the first man whom they met going to the temple of Jupiter in a car, had the good fortune to be found in that situation. Immediately afterwards, he consecrated his car in the temple, tying the yoke to the draught with such art that it could not be unloosed. Then the report spread that the oracle had decreed the empire of Asia to him who should untie the Gordian Knot. Coming to the place, Alexander the Great made short work of the difficulty by cutting the cord with his sword, and thereupon he claimed to be the foretold ruler of Asia.
Gorgon, a name specially applied to Medusa, one of three sisters who had wings of gold, and but one eye for use among the three. The 'Gorgon's head,' or 'Medusa's head,' is frequently alluded to as significant of an object of terror, because it was encircled with snakes, and turned the beholder to stone.
Government, Various Forms of, 40–46.
Gracchus, the name of a noble family of republican Rome, two members of which made themselves noted for their revolutionary measures, 104.
Grammar, Universal, 21–25; English, 577–592.
Grates, for houses, 769.
Gratitude and ingratitude, duties regarding, 460.
Grease spots, how to remove, 774.
Greece, Ancient History of, 81–96; mythology of, 81; religious rites of, 86; literature and fine arts of, 95, 96; Modern Greece, description of, 200.
Greenland, general description of, 297.
Grenada, new republic of, 308; island of, 316.
Guiana, territory of, described, 312.
Guillotine, instrument of execution, 687.
Guitar, musical instrument, 768.
Gules (red), a term in heraldry, 47.
Gunpowder plot, in English history, 141, 446.
Guttenberg, the father of printing, 705.
Gymnastic Exercises, 641–647.

Habeas-Corpus Act, 149.
Habeas Corpus, in Law, 62.
Habits, duties respecting the formation of, 453.
Habits, metaphysically considered, 334, 352.

Hair, how to keep and preserve, 784.
Hair-dyes, 784.
Halcyoné, a princess who grieved so deeply for the loss of her spouse at sea, that she was sent to that element out of pity, changed into a kingfisher. Being favoured with seven calm days for brooding, the phrase of 'Halcyon days' came to denote a time of peaceful happiness.
Hallowe'en—All-Hallow eve, festival of, 444.
Hamadryades, rural nymphs, who are said to preside over trees.
Handsel-Monday, first Monday of the year, 448.
Hannibal, a famous Carthaginian, who, when a boy, was made by his father to vow eternal enmity to Rome. He fulfilled in due time the oath, proving the most dangerous foe ever known to the Romans. So great was the promise of his early days, that before the age of twenty-six he received the command-in-chief of all the armies of his country. In this situation he determined upon the bold step of crossing the Alps, and carrying war into the heart of Italy. His passage has ever been viewed as a wonderful military feat, and was partly accomplished, historians say, by his kindling large fires, and pouring vinegar on the heated rocks, which caused them to rend or crumble in pieces. Once in Italy, he defeated, one after another, all the commanders sent against him from Rome, and for sixteen years held that city in continuous alarm. At length the Romans sent a force to menace Carthage, and Hannibal was hastily recalled, only to be wholly vanquished near his native city by Scipio Africanus. A brief peace was granted afterwards to Carthage; but mistrustful of his enemies, Hannibal fled to Syria, and subsequently to Bithynia, where, his person being demanded by the Romans, he ended his life by taking poison, 182 B.C. The youthful vow and acts of Hannibal meet with frequent notice in literature, 102.
Happiness, attainment of, 464.
Hardware and cutlery, in domestic economy, 770.
Harmonium, musical instrument, 768.
Harmony, in Metaphysics, 333.
Harmony, nature of, in Music, 737, 744.
Harp, stringed musical instrument, 768.
Harpsichord, musical instrument, 768.
Hautboy or Oboe, musical instrument, 766.
Health, duties regarding, 450.
Hearing, as a sense, 325.
Hêbé, daughter of Jupiter and Juno, and the goddess of youth, for which, in its beautiful forms, her name is a synonyme. She was the first cup-bearer of the gods.
Hebrides or Western Islands of Scotland, 235.
Hecate, the goddess supposed to preside over enchantments.
Hector, the most valiant of the sons of King Priam of Troy, ultimately killed by Achilles. His name is applied to brave men, and not unfrequently to boastful ones, though Homer assigns none but truly great qualities to the Trojan prince.
Hejira or Hegira, era of, 411.
Helena, the most beautiful woman of her age, and whose abduction from her husband, Menelaus, king of Sparta, by the Trojan prince Paris, caused the siege and fall of Troy, all the Greek princes having united to effect her recovery. Helen was one of the children of Leda by Jupiter. She was ultimately restored to Menelaus.
Helicon, a mountain of Bœotia, sacred to the Muses, who had a temple there.
Hĕliogabălus, a Roman emperor, so extravagantly devoted to the pleasures of the table, that his name has become a synonyme for a glutton.
Heliography or sun-drawing, 732.
Helots, a menial caste at Sparta, whose name has become significant of the most abject slavery, 90.
HERALDRY, 46–48.
Hercules, the most famous personage of the heroic age of Greece. He is the type of physical power in painting and sculpture, and is always drawn with a mighty club in his hand, 82.
Hero, a fair priestess of Venus, who, when her lover Leander perished in swimming across the Hellespont, threw herself into the sea. She is often painted with a torch in her hand, as a guide to the bold but unfortunate swimmer.
Herodotus, a famed historian of Greece, generally styled the 'father of history.'
Hesiod, a very early Bœotian poet of superior powers.
Hesperides, three celebrated nymphs, who, with a dragon for a watchdog, were intrusted with the care of Juno's golden apples, placed in a garden in the neighbourhood, it was said, of Mount Atlas. Hercules, in one of his labours, carried off some of this much-prized fruit. This story of the apples of the Hesperides is often used, by way of comparison, to signify things of difficult access and great rarity and price.
Hieroglyphics, Egyptian, 675.
Hindoolsm, account of, 70, 268, and 403.
Hindoostan or India, Ancient, history of, 69; castes and population of, 69; antiquities of, 677; Vedas, the, or ancient sacred books of the Hindoos, 70—Modern, description and account of, 261–272; territorial division, 262; civil history, 263; revenue system of British India, 265; native populations, 267; religion, 268; products, 269; chief cities, 271.
Hippocrates, a physician of the isle of Cos, whose existing writings prove him to have made wonderful advances, for his time, in the art of medicine, and whose name is yet often alluded to.
Hippocrene, a fountain on Mount Helicon, the waters of which are said to have given inspiration to poets, because the hill was sacred to the Muses.
HISTORY OF ANCIENT NATIONS, 65–80; OF GREECE, 81–96; OF ROME, 97–112; OF THE MIDDLE AGES, 113–128; OF GREAT BRITAIN AND IRELAND, 129–176.
History, as a literary art, 695.
Hockey or shinty, game of, 655.
Hogmanay, in Scotland, last day of the year, 448.
Holland, geographical description of, 203.
Holograph (Gr. *holos*, whole, and *grapho*, I write), a law-term for a will entirely written by the hand of the testator.
Homer, the greatest of the poets of Greece, born, according to the most probable accounts, in the isle of Chios. His name signifies 'The Blind,' and he is said not only to have suffered under this calamity, but to have been a mendicant, or at least a wanderer dependent on his minstrelsy for daily bread. The combination of all the highest poetical qualities in the writings of Homer, from terrible sublimity to the tenderest pathos, has been a fruitful source of astonishment to succeeding times, the rudeness of the age in which he lived being considered. The 'Iliad' and the 'Odyssey' are his great works.
Honduras or Belize, account of, 297.
Hope, faculty of, in Phrenology, 346.
Horace, a Roman poet, whose lyrics and satires abound in maxims which are often and deservedly quoted.
Hortus siccus, how to form, 781.
House, choice and furnishing of, 769; order and management, 770; cleaning, 771; ventilation, &c. 776.
HOUSEHOLD HINTS, 769–784.
Housekeeping, economy of, 770.
Hull, sea-port, description of, 221.
Humour, in style, 692.
Hurling or shinty, game of, 655.
Husband and wife, relation of, 470.
Hybla, a mount of Sicily, famous for its fragrant thyme and its honey.
Hydra, a many-headed monster killed by Hercules, to which an unruly rabble is often compared.
Hygeia, the goddess of health, daughter of Æsculapius.
Hymen (or *Hymenæus*), the god of marriage, whose favour was solemnly invoked with song and sacrifice by all entering on the wedded state.

Iambics, verses composed of short and long syllables alternately.
Icarus, son of Dædalus, who, in flying from Crete with his sire, soared so near the sun as to melt the joints of the wings made by his father, and thereby fell into the sea.
Iceland, description of, 215.
Iconoclasm (Gr. *eikon*, an image, and *klasma*, a breaking), the act of breaking or destroying images or statues; Iconoclast, one who destroys images.
Iconography, a description of statues and similar monuments of ancient art.
Ida, a mountain near Troy, where Paris assigned to Venus the prize of beauty over Juno and Minerva.
Idealism, in metaphysics, the system or theory that makes everything to consist in ideas, and denies the existence of material bodies; also the designation of many and different systems of philosophy, which only agree in the common principle from which they originate. This principle is the opposite of the ideal and the real—that is, of ideas and things; the contrariety of mind and body, or of spirit and matter. An Idealist is one who holds the doctrines of idealism.
Ideality, organ of, in Phrenology, 346.
Idiom, a mode of speaking peculiar to a language or dialect; hence we speak Latinisms, Gallicisms, Scotticisms, &c.
Ilissus, a river and river-god of Attica, remarkable as the subject of a noble extant piece of Greek statuary.
Ilium, a name for Troy; whence the term *Iliad*.
Illusions, spectral, 427.
Imbroglio (Ital.): in literature, the plot of a romance or drama, when much perplexed or complicated, is said to be an *imbroglio*.
Imitation, in Metaphysics, 335; in Phrenology, 347; in musical composition, 764.
Imports and exports of Britain, 187.
Imprint, in letterpress-printing, the designation of the place where, by whom, and when, a book is published. Among the early printers it was inserted at the end of the book, and was styled a *colophon*.
Incombustible cloth, how to make, 780.
Indies, East. See Hindoostan, 261–272.
Indies, West, general account of, 313–320.
Individuality, in Phrenology, 347.
Indorse (Lat. *in*, and *dorsum*, the back), to write on the back of a paper or written instrument; hence to assign or transfer a bill, for example, by indorsement. Indorsee, the person to whom a bill or note is indorsed, or assigned by indorsement.
Induction, in Logic, [illegible]
Industry, nature of, in Political Economy, 498.
Infancy, management of, 449.
Inflection of words, in Grammar, 581.
Inhabitiveness, in Phrenology, 340.
Ink-stains, how to remove, 773-774.
Inks, sympathetic, 780; indelible, 781; common, 781.
Insects, design in the structure of, 374; how to preserve, 781.
Insignia (Lat.), a term applied to badges, or distinguished marks of office or honour.
Instincts of the human mind, 327.
Intellect, the human, 328.
Intemperance, habit of, 454.
Interest, in Arithmetic, 601; in Political Economy, 492.
Interjection, in Grammar, 580.
International duties, 477.
Inverness, description and account of, 240.
Invoice. See commercial terms, 501.
Involution and evolution, in Algebra, 606.
Io, a beautiful woman, with whom Jupiter fell in love, and whom he changed into a heifer, to preserve her from the jealousy of Juno. The suspicious Juno begged the heifer, and set Argus of the hundred eyes to watch it; but Mercury, to oblige the superior deity, killed the keeper, and set free the metamorphosed lady.
Ionian islands, description of, 201.
Iphigenia, daughter of Agamemnon. That chief, while at Aulis, on his way to Troy, was detained by contrary winds, and was told that only by the sacrifice of his daughter to Diana could the Greek fleet proceed in its course. He reluctantly consented; but when Iphigenia was brought to the altar, she suddenly disappeared, and a goat was seen in her place. Diana carried her off, says the story, to be a priestess at Taurica.
Ireland, history of. See History of Great Britain and Ireland, 129–176; description of, 241–256; superficial features, 241; geology, 241; hydrography, 242; climate, 243; botany and zoology, 243; population, 243; national industry, 244; commerce, 245; government and administration, 246; antiquities, 246; province of Leinster specially described, 247; Munster, 250; Ulster, 252; Connaught, 255.
Iris, the messenger of the queen of heaven, and the goddess of the rainbow, the appearance of which was held to indicate a mission of Iris to earth.
Isis, a celebrated female deity of the Egyptians, wedded to her brother Osiris.
Isthmia, solemn triennial games of the Greeks, which derived their name from being celebrated on the Isthmus of Corinth. Combats, races, and athletic sports of every kind, were among the exhibitions, and the poets also contended there for the prize of the bays.
Italian republics, nature of the, 124.
Italy, description of, 196.
Ithaca, a small islet, now called Thiaki, in the Ionian sea, famous as the kingdom of Ulysses.
Ixion, a king of Thessaly, who rendered himself so odious on earth by the murder of his father-in-law, that Jupiter, in misplaced compassion, took him up to heaven. There, however, Ixion behaved so insolently, that Jupiter struck him down to the infernal regions, and ordered him to be tied with serpents to a wheel, which, revolving for ever, rendered his punishment eternal.

Jamaica, island of, described, 315.
January, festival Calendar for, 433.
Janus, one of the primitive kings of Italy, placed after his decease, on account of his equity, among the gods. He was the guardian of gates, and was represented with two heads, probably to indicate the watchfulness required in such custodians. January was named from this deified personage.
Jason, the leader of the Argonauts, with whom he went to Colchis on the Euxine Sea to regain the golden fleece. The king of Colchis promised its restoration if Jason could tame certain flame-breathing bulls, slay a dragon, and perform other difficult feats. Aided by Medea, the king's daughter, an adept in all the arts of enchantment, the chief of the Argonauts accomplished these tasks, and won the fleece; after which he departed secretly, carrying Medea with him as his wife, according to his solemn engagement. Returning home, he found his father Æson too infirm to partake of his triumph; but the art of Medea restored the old man to youth. Jason subsequently became unfaithful to Medea, and, roused to madness, she slew her own children before their father's face.
Jesuit, one belonging to the society of Jesus, founded by Ignatius Loyola, a Spaniard, in 1534.
Jews, the ancient, 75.
Judgment, metaphysically considered, 352.
Jugurtha, an illegitimate nephew of Micipsa, king of Numidia, who slew his cousins, and seized their throne. The historian Sallust has made his name proverbial for cunning, daring, and cruelty.
Julian, an emperor of Rome in the fourth century A.D., usually named 'The Apostate,' from his having deserted Christianity for Paganism, after being trained up to the former faith. He was, notwithstanding, a man of many virtues, and also of superior talents, as his acts, as well as some of his extant writings, sufficiently indicate.

July, festival Calendar for, 441.
June, festival Calendar for, 441.
Juno, sister and wife of Jupiter, and queen of the mythological heaven of Greece and Rome. Her beauty was of a grand and stately kind, and not feminine enough to fix the affections of her husband, whom she annoyed with her jealousies. Her most famous acts consist of persecutions of his mortal mistresses. She was almost universally worshipped, and had splendid temples at Argos, Olympia, Samos, Carthage, and Rome. Her favour was peculiarly implored by women, on account of her being the patroness of marriage and childbirth; and she was also the assigner of power and riches, 86.
Jupiter, son of Saturn and Ops, king of heaven, and ruler of all the gods. Saturn habitually devoured his own children; but Ops deceived him at the birth of Jupiter with a stone, and the child was saved. On reaching the age of one year, he warred with the giant-gods called Titans; and after conquering them, and besides dethroning his father, became the supreme deity and sole wielder of the dreadful thunder. It would be fruitless to go over the actions ascribed to Jupiter, which consist chiefly of low and often ridiculous amours. He was usually represented as a being of majestic countenance, seated on a throne, with a messenger-eagle at his feet, and a thunderbolt and sceptre in his hands. His chief temples were at Dodona in Greece, and Ammon in Libya, and he had numerous names, corresponding to the site of these or to some of his actions; as *Jupiter Capitolinus* (the Capitoline Jove), and *Jupiter Tonans* (Jupiter the Thunderer), 86.
Jurors, duties of, 468.
Jury, trial by, 62.
Juvenal, an able and unsparing satirist of Rome in the early times of the empire.

KEY TO THE CALENDAR, 433–448.
Keys, diversity of, in Music, 740.
Knives, table, how to clean, 772.
Koran, or record of the Mohammedan faith, 412.
Krishna, in Hindoo mythology, one of the incarnations of the god Vishnu.

La Plata, or Argentine Republic, 310.
Labour, division of, 484; productiveness of, 485; price of, 489; duties respecting, 452.
Labyrinth, any place with so many windings as to render escape from it difficult. The most famous of the several labyrinths mentioned by old writers was the Cretan one, built to confine a monster called the *Minotaur*.
Lachĕsis, one of the Fates, who spun the thread of life, 87.
Lachrymatory (Lat. *lachryma*, a tear), a small glass vessel or phial found in ancient Roman sepulchres, in which it has been supposed that the tears of the friends of the deceased were dropped, and preserved with the ashes contained in the urn.
Laconia, a Peloponnesian district, of which Lacedæmon was the capital. The people of the region spoke little, and hence the application of the epithet *Laconic* to concise talking or writing.
Lais, a Corinthian courtesan of such beauty and notoriety, that her name has become a synonyme for others in her position.
Lamaism, account of, 408.
Lammas, term and festival of, 442.
Lancaster, House of, in English history, 133.
Land, rent or price of, in Political Economy, 493.
Landamman (Ger.), the title given in Switzerland to the chief magistrate of a canton; applied also to the president of the Swiss republic.
LANGUAGE, 17–32.
Language, organ of, in Phrenology, 349.
Languages of the globe, classification of, 29–32.
Laocoon, a Trojan prince, priest of Apollo, who, having offended Neptune, was strangled, with several of his sons, by two enormous serpents which issued from the sea. This fable has been rendered immortal by an ancient sculptor, whose work on the subject is yet preserved.
Lapithæ, a family or tribe descended from Apollo, famous for having gained, with the aid of Hercules, a dreadful battle against the Centaurs.
Lares, minor deities, supposed by the Romans to preside over households, and represented by small images, which the possessor always took with him on a change of residence.
Largo (Ital.), in music, a slow movement, one degree quicker than *adagio*; *larghetto*, less slow than largo.
Latinus, king of the Italian aborigines, who gave his name to the Roman language.
Latona, mother of Apollo and Diana by Jupiter, and worshipped in many temples.
Lavender-water, how to make, 784.
LAWS, HISTORY AND NATURE OF, 49–64; Roman or civil law, 49; canon law, 53; feudal law, 53; law of England, 56; law of Scotland, 62; French codes, 63.
Leander, a youth of Abydos, who, being in love with Hero of Sestos, was wont nightly to swim across the Hellespont to meet her, but was at last drowned in a storm.
Leaping, in Gymnastics, 642.
Lease (Fr. *laisser*), a law term for a conveyance of lands or tenements (usually on consideration of rent or other annual recompense), made for life, for years, or at will; but always for a *less* time than the lessor has in the premises; for if it were for the *whole* interest, it would be more properly an *assignment* than a *lease*. The lessor is he who grants the lease; the lessee the person to whom it is given.
Leda, wife of Tyndarus of Sparta, visited by the enamoured Jupiter in the form of a swan, and mother of Helen, Clytemnestra, Castor, and Pollux.
Leeds, description of, 218.
Leith, description and account of, 237.
Lemonade, recipe for making, 780.
Leonidas, a renowned Spartan, who, when the Persians invaded Greece with several millions of men, took post at the Pass of Thermopylæ with no more than 300 men, and, self-devoted to death, defended it for three days, until he and all his companions perished, after making fearful havoc among the enemy, 91.
Lethe, an infernal river, whose waters made those who drank it forgetful of all the past. Lethe is a poetical synonyme for oblivion.
Letterpress-Printing, 705–720.
Letters, formation of, 18.
Levée (Fr.), 1. The time of rising; 2. The ceremonial visits which distinguished persons receive in the morning, or at their rising. In this country, the word is chiefly applied to the stated public occasions on which the sovereign receives visits from such as are entitled, by rank or fortune, to that honour.
Lexicon (Gr.), a dictionary or book containing an alphabetical arrangement of the words of a language, with the meaning of each; lexicology, the science of so arranging and treating words; lexicography, the art of writing or compiling a dictionary; and lexicographer, one who writes or compiles such a work.
Libation (Lat.), the act of pouring a liquor—usually wine, water, or milk—on sacrificial occasions; also, the liquor so poured out. In familiar language, the liquor drank on festive occasions; synonymous with potations.
Lieutenant (Fr.), an officer who supplies the place of a superior in his absence. In the army, the second commissioned officer in a company; in the navy, the officer next in rank to a captain.
Life, duties of, private, 449–464; public and social, 465–480.
LIFE-ASSURANCE, 524–528.
Light and shade, in Drawing, 684.
Lignography (*lignum*, wood, and *grapho*, I draw), an affected term for wood-engraving; hence also lignograph for woodcut, 721.

Line-engraving, process of, 726.
Literary art, in Rhetoric, 701.
Lithoglyph (Gr. *lithos*, a stone, and *glyphô*, I engrave), an engraving on a precious stone or gem.
LITHOGRAPHY, art and practice of, 730.
Liverpool, description and account of, 220.
Livy, one of the most illustrious of the Roman historians.
Lloyd's List—a well-known periodical publication, which contains a full account of shipping intelligence. It derives its name from Lloyd's Coffee-house, so long celebrated as the resort of all classes connected with the mercantile or shipping interest; and its importance in supplying full, trustworthy, and early maritime information, cannot be easily overrated. For an ample account of the origin, rise, and present condition of this establishment, see 'Chambers's Edinburgh Journal,' No. 111, New Series.
Loan societies, 536–538.
Locality, organ of, in Phrenology, 348.
Logarithms, 603.
Logging-stones, in England, 215.
LOGIC, 353–368.
London, description and account of, 216.
Loo, game with cards, 671.
Lords, constitution of the House of, 177.
Lozenge (Fr.), in geometry, a figure with four equal sides, having two acute and two obtuse angles; in heraldry, a figure on which is represented the armorial-bearings of maidens and widows; in confectionary and medicine, small cakes, so called from their original form, to be chewed or held in the mouth till dissolved.
Lucifers, how to make, 781.
Lucretia, a young and noble Roman matron, who fell a victim to the licentious passion of the son of Tarquin, king of Rome. After her dishonour, she summoned to her presence her husband and relatives, and, disclosing her injuries to them, took away with her own hands the life which she could no longer endure. Junius Brutus took up the bleeding knife which she had used, and swore upon it to avenge her death, an oath amply fulfilled.
Lucretius, a Roman poet, whose work on the 'Nature of Things' (*Natura Rerum*) forms one of the best expositions of the heathen philosophy.
Ludicrous, emotion of the, 333–346.
Lupercalia (Lat. *lupus*, a wolf, and *arcere*, to defend from), Roman festivals in honour of Pan or Faunus, celebrated on the third day after the ides of February, and repeated on the nones of December, under the name of Faunalia, when the worshippers were clothed with goatskins. These feasts were abolished by Pope Gelasius in 496, on account of the many disorders they occasioned.
Lute, a stringed instrument, 768.
Lycæum, a name originally given to the place where Aristotle taught, and since applied to establishments in some respects similar.
Lycurgus, a celebrated lawgiver of Sparta, whose maxims all tended to make men live simply and plainly, 89.
Lydians, the ancient, 79.
Lyre, a stringed instrument, 768.
Lyric poetry, nature of, 702.

Mab, in northern mythology the queen of the fairies, 421.
Madness, attacks of, how to proceed in cases of, 776.
Madras, description and account of, 271.
Mæander, a river of Asia Minor, so notable for its windings as to have originated the word *meander*, bearing that meaning.
Mæcenas, prime-minister to Augustus Cæsar, and so highly famed for his countenance of Virgil, Horace, and other men of letters, that a literary patron has since been commonly named a Mæcenas.
Mæonides, a name applied to Homer, and from him, in the plural, to the Muses.
Magna Charta, or great charter, 181.
Maia, mother of Mercury, by Jupiter.
Malay variety of mankind, physical and mental characteristics of, 5.
Malaysia, geographical description of, 281.
Malthus, his theory of population, 513.
Mammalia, design in the structure of, 377.
MAN, PHYSICAL HISTORY OF, 1–16.
Man, relation between and external nature, 371.
Manchester, description and account of, 217.
Manes, a term applied by the ancients to the souls of the dead.
Mankind, distribution of, 6; differences in anatomical structure, 7; physical character, 10; mental character, 14; permanency of types, 16.
Manners, good—politeness, 457.
Manufactures, British, statistics of, 185–186.
Marathon, a plain of Attica, where Miltiades the Athenian, with comparatively a mere handful of men, routed the vast army of the Persians, 91.
Marble hearths and chimney-pieces, how to clean, 771.
March, festival Calendar for, 437.
Marius, a Roman of celebrity, who, from the rank of a peasant, raised himself by his talents to the highest offices of the state. Reduced at one time to the greatest danger and distress, he fled to Africa, and, himself then a ruin, he sat down on the ruins of Carthage. Again obtaining power, Marius glutted his vengeance by the most inhuman massacres, and died amid the blood he had spilt, 105.
Marlborough, his campaigns, 155.
Marriage, social nature of, 33; duties connected with, 469.
Marriages, statistics of, 546.
Mars, the god of war, son of Jupiter and Juno. He was represented as an armed figure in a chariot, driven by Bellona, and drawn by two horses, which the poets named Terror and Flight.
Mary, queen of Scots, 136–138.
Masters and servants, duties of, 472; relations of, 771.
Mausolus, king of Caria, so dearly beloved by his wife, that at his death she drank up his ashes, and erected to him a monument so splendid as to be deemed one of the seven wonders of the world; hence the modern word *mausoleum*.
May, festival Calendar for, 440.
Mayor, chief municipal magistrate in England and Ireland, functions of, 45.
Measure or rhythm, in Music, 739.
Measures and weights, British, 597.
Medea, princess of Colchis, and wife of Jason, celebrated for her magical arts, her restoration of the youth of Æson, and her murder, when infuriated by jealousy, of the children born by her to her husband.
Medes, history of, 79.
Medusa, one of the Gorgons, whose frightful snake-encircled head turned the beholders to stone. She was slain by Perseus, who placed her head on Minerva's shield, thence rendered unendurable by mortal eyes.
Meetings, public, conduct at, 466.
Mehemet Ali, late pasha of Egypt, notice of his life and doings, 277.
Meleager, an ancient hero, celebrated for slaying the monstrous Calydonian boar.
Melody, in composition, 691; in Music, 737, 743.
Melpomené, the Muse who presided over tragedy.
Memnon, an aboriginal Ethiopian or Egyptian king, to whose memory the people of Thebes raised a colossal statue of black marble, which had the wonderful power of emitting musical sounds when struck by the rays of the rising and setting sun. Most writers ascribe this phenomenon, which is often adverted to, to the jugglery of the priests; but some modern travellers, who have visited the yet extant ruins of the statue, have fancied that it emits sounds even at this day.
Menelaus, king of Sparta, the abduction of whose wife Helen by Paris caused the Trojan war.

Mensuration, in Arithmetic, 602; in Geometry, 615.
Mentor, a name which Minerva assumed when she became the guide of Telemachus in his wanderings; hence arises a familiar title for a counsellor.
Mercury, otherwise called Hermes, son of Jupiter and Maia, and herald of the gods. He presided over oratory, commerce, and thieving, and conducted the spirits of men to the infernal regions, 86.
Metaphor, in literary compositions, 691.
Metaphysics, 321–336; logic of, 368.
Metonymy, in Rhetoric, 692.
Mexico, description and account of, 304.
Mezzotinto, a species of engraving, 727.
Mice, how to destroy, 774.
Michaelmas-day, term and festival, 443.
Midas, a Phrygian king, who, having done a favour to Bacchus, was requested by the god to ask what reward he chose, and, out of foolish avarice, requested that all he touched might become gold. As his very food was converted into that metal, he soon besought the withdrawal of the gift, and was freed from it by bathing in the river Pactolus, the sands of which were turned to gold. For subsequently preferring the music of Pan to that of Apollo, the latter gave Midas the ears of an ass.
Middle Ages, History of, 113–128.
Milo, an athlete of old, famous for his great strength. He could carry a large ox, kill it with a blow of his fist, and finally eat it up in one day.
Miltiades, the illustrious Athenian who commanded at Marathon, and afterwards died in prison, a sad monument of human ingratitude.
Mind, The Human, 321–336.
Minerals, how to keep, 781.
Minerva, goddess of wisdom, war, and the arts and sciences, who sprung completely armed from Jupiter's brain, according to the fable, without a mother. She is described as one of the most chaste and respectable of all the deities; and though swayed at times by passions far from divine, was a great benefactress of mankind, who owed to her most of the liberal arts. The name of Pallas was as often given to her as Minerva; and from being the patron deity of Athens, she was also called Athena, 87.
Minim, in musical time, 739.
Minion, a variety of type, in Printing, 709.
Minos, a famous king and lawgiver of Crete, who, for his equity, was appointed one of the judges of the spirits of men after his decease. A monster called the Minotaur was shut up in the labyrinth of Dædalus; and Minos, severe though just, gave it the captive youth of Athens to devour, till Theseus slew it.
Misfortunes, our duty regarding, 474.
Mithridates, a name borne by several kings of Pontus, one of whom, a man of supereminent talents, had such a knowledge of pharmaceutical herbs that he could counteract the effect of the most deadly poisons; hence the use of the word *mithridate* as a synonyme for an antidote to such drugs.
Mnemosyné, the goddess of Memory, and mother of the nine Muses by Jupiter.
Modulation, in Music, 754.
Mohammedanism—Mohammed, 408–416; also 115.
Momus, the god of fun and pleasantry, jester-general and satirist of the mythological heaven.
Monarchy, monarchical governments, 41.
Money, origin and nature of, 503; coined money, 504; paper money, 505; in Political Economy, 491.
Mongolian variety of mankind, physical and mental characteristics of, 4; history of, 67.
Monogamy (Gr. *monos*, one, and *gamé*, marriage), marriage with one wife, 33.
Montserrat, British West India Island, 317.
Moot or moat-hills, in Scotland, 235.
Moral Philosophy—Ethics, 363.
Morpheus, son and minister of Somnus, the god of Sleep. He visited mortals in dreams.
Mortality, bills of—accounts of the number of births and burials within a given district for every week, month, quarter, or year. See Popular Statistics. 545–557.
Mortality, effects of seasons on, 551; effects of wealth and civilisation on, 552; effects of increased wealth and knowledge on, 555.
Mortality, rates of, in Life-Assurance, 525.
Multiplication, in Arithmetic, 595; in Algebra, 603.
Mummies, Egyptian, 72.
Muse, the nine Muses, daughters of Jupiter and Mnemosyné. Apollo was their patron, and the conductor of their orchestra. From certain spots consecrated to them, the poets call them the Pierian, Castalian, and Aonian maids, 87.
Music, 737–768.
Muslin dress, how to clean, 774.
Myrmidons, an attached band of Thessalians who accompanied Achilles to the war of Troy. Eager followers of any description are familiarly called by this title, as 'the *myrmidons* of the law.'

Naiads, certain minor goddesses, who presided over springs, fountains, and rivers, 87.
Nails, how to clean the, 785.
Napoleon, wars with, 168–172.
Narcissus, a beautiful youth, who pined away and finally killed himself through love for his own image, as reflected in a fountain. He was said to have been changed into the flower which bears his name.
Navy and army of Britain, 184.
Negro (Lat. *niger*, black) family, in Ethnology, 4; in History, 65.
Neighbours, our duties as, 468.
Nemesis, the goddess of vengeance, implacable to the bad, but kind to the virtuous.
Neptune, god of the sea, which element was assigned to him when Jupiter and Pluto, the two other chief deities, assumed the sway of the other portions of the universe. Neptune was represented in a chariot of sea-shell, drawn by horses with wings, and in his hand he held a trident, the emblem of his authority, 86.
Nereus, a minor deity of the sea, represented as an old man with a long beard, attended by fifty sportive maids, his daughters, who were called Nereids, and were worshipped by the ancients.
Nero, a Roman emperor, proverbially infamous for his crimes and vices. Originally a youth of promise, Nero was quickly changed in character by the unbounded rule, too much for a mortal to possess, which was then attached to the imperial throne. He assassinated his own mother, and, for the mere luxury of the sight, set fire to the city of Rome. His employment during the fatal conflagration is shown by the sentence, 'Nero fiddled while Rome was burning.' He died by his own hands, to escape the fury of his outraged countrymen.
Nestor, king of Pylos, who, at a very advanced age, went to the Trojan war; and is so highly lauded by Homer for his eloquence, that posterity have adopted his name as a synonyme for a wise and venerable old man.
New Britain, in North America, 292.
New Brunswick, description and account of, 296.
New Grenada, republic of, 308.
New South Wales, account of, 283.
New Zealand, settlements of, 286.
Newcastle-on-Tyne, description and account of, 221.
Newfoundland, general account of, 297.
Nice, Council of, 397; creed, 397.
Niello (Ital.), a species of engraving, 726.
Nile, the, description and account of, 276.
Nineveh, ancient city of, 77.
Nomades, Nomadic society, 36.
Normans, conquer Britain, 130; their early kings, 131.
Norway, geographical description of, 206.
Notation, in Arithmetic, 593.
Noun, in Grammar, 577; inflection of, 581.
Nova Scotia, description and account of, 295.
November, festival Calendar for, 444.

Numa, a sovereign of Rome, proverbial for legislative skill, which he affected to owe to the counsels of a supernatural and secret visitant named Egeria.
Number, organ of, in Phrenology, 348.
Numeration, in Arithmetic, 594.
Nymphæ, a general term applied to all the minor goddesses of the land and sea, such as the Dryads, Naiads, and Nereids. The nymphs were held not to be immortal, but to live for several thousand years.

Oberon, king of the fairies, 420.
Oceana, geographical account of, 281.
Oceanides, sea-nymphs, daughters of Oceanus, and numbering several thousands. Their father Oceanus, like Cœlus the Heaven, and Terra the Earth, was one of the primitive divinities, and was totally different from Neptune, being the creation of a much earlier mythology.
Octavo, a printer and bookbinder's term, 711.
October, festival Calendar for, 443.
Odin, in Scandinavian mythology, 417.
Œdipus, a king of Thebes, son of Laius and Jocasta. Being exposed in youth, he had the misfortune to kill his father and marry his mother ere he discovered his parentage. These events made his story a sorrowful theme for the poets; but his name is now chiefly familiar in the sense of an expounder of riddles, because he solved the enigma proposed by a talking monster called the Sphinx, and put an end to its ravages.
Olympia, a town of Elis in the Peloponnesus, where the famous Olympic games were celebrated. These were of great antiquity, and comprised not only athletic exercises of every kind, chariot-racing, and the like, but also contentions in poetry, eloquence, and the fine arts. The celebration took place at the end of every four complete years, and hence it became the fixed practice to measure time by these intervals, called Olympiads, 86.
Olympus, a mountain of Thessaly, which, from its altitude, the ancients conceived to reach the heavens, and which they made the home of the gods.
Oneiromancy (Gr. *oneiros*, a dream, and *manteia*, divination), divination or foretelling of events by dreams; from the same source we have oneirology, the doctrine and theory of dreams.
Ophicleide, musical instrument, 767.
Opinions, duties regarding the forming of, 476.
Or (Lat. *aurum*, gold), a term in heraldry, 47.
Oratorio (Ital.), a sacred musical composition, consisting of airs, recitations, duets, trios, choruses, &c. the subject of which is generally taken from Scripture.
Orcus, a name of Pluto, frequently used to signify the nether regions.
Order, organ of, in Phrenology, 349.
Oreads, the goddess-nymphs of the mountains.
Orestes, the son of Agamemnon and Clytemnestra, and the avenger on the latter of his sire's murder. Pursued in consequence by the Furies, Orestes could find peace no where, though tenderly consoled and supported by Pylades, whose name and his own have become proverbial for bosom friendship. Orestes was at length purified from stain by bringing the Taurican statue of Diana to Greece.
Organ, musical instrument, 767.
Orgies (Gr.), frantic revels at the feast in honour of Bacchus, which was held during the night; hence the familiar term 'nocturnal orgies' for any midnight scenes of riot and dissipation.
Oriflamb or oriflamme, the ancient royal standard of the kings of France—

'And be your *oriflamme* to-day the helmet of Navarre.'

Orion, a gigantic personage, who, after various adventures on earth, had the honour of being elevated to a place among the constellations.
Orpheus, the most famous of the early poets and musicians of Greece, who, by his art, could not only 'charm the savage breast,' but cause mountains to dance and streams to pause in their course. On the death of his wife Eurydice, he went to seek her, and so enchanted Pluto with his strains, that the god gave back his spouse to him, only stipulating that he should not look upon her till the earth was reached. But Orpheus turned to gaze, and Eurydice was lost.
Orris-root, the root of the *Iris Florentina*, used in perfumery. See the toilet.
Osiris, a great Egyptian deity.
Ossa, a lofty mount of Thessaly, said to have been moved by the giant Titans, when they sought to scale the heavens. Hence the well-known allusion to the piling of Pelion, another hill, on Ossa.
Ostracism, banishment from Athens, 90; also applied generally to exile, whether voluntary or compulsory.
Ovid, a poet of Rome, noted for the ease and elegance of his verse, but stained by immoralities of thought and diction.

Pactolus, a river of Lydia, the sands of which were said to be converted into gold when Midas dipt his hands in them.
Pæan, a hymn sung in honour of the Pythian Apollo.
Pagan Religions—Paganism, 401–408.
Pain, metaphysically considered, 332, 352.
Painting, Art of, 638–640.
Palestine, ancient history of, 75.
Palillogy (Gr. *palin*, again, and *logos*, a word), in rhetoric, the repetition of a word or part of a sentence for the sake of effect, as

——'The sleep—
Sleep that knits up the ravelled sleeve of care.'

Palinurus, a pilot who has given a name to his craft from his skill in guiding the bark of Æneas.
Palladium, a famous colossal statue of Pallas-Minerva, on which the city of Troy, in which it stood, depended for preservation. It was stolen by the Greeks. The importance of the statue to Troy has originated such phrases as the 'Palladium of our liberties,' applied to important privileges, statutes, and the like.
Palm-Sunday, festival of, 437.
Pan, the god of shepherds, huntsmen, and rustics generally, and son of Mercury. He was painted like the satyrs, having horns and the limbs of a goat. He invented the flute with seven reeds. Pan was worshipped very extensively, but particularly in Arcadia, where he had an oracular temple on Mount Lycæus, 87.
Panacea, the skilful daughter of the medicine-god Æsculapius, from whose name originated a word signifying a universal cure.
Pandora, the first woman, according to some ancient writers. Jupiter, wishing to punish the Titan Prometheus, caused Pandora to be made of clay, and each of the deities bestowed some personal gift on her. She was then sent with a closed box to Prometheus, but he suspected some artifice, and sent her away. His brother was less cautious, and wedded Pandora, from whose box, when opened, there issued all the ills that have since afflicted mankind. As a cure for these ills, Hope only remained upon earth.
Pantheism (Gr. *pan*, all; and *theos*, God). In metaphysical theology, this term is applied to the theory which identifies nature or the universe with God; pantheist, one who adopts the theory of Spinosa, that the universe, in its complicated but harmonious relations and developments, is God.
Pantheon, a temple of Rome, dedicated, as its name implies, to all the gods.
Paper-hangings, how to clean, 772.
Paphos (now Bafo), a city of Cyprus, from which Venus, to whom that isle was sacred, frequently receives the name of the Paphian goddess.
Paraguay, account of, 310.
Parallel lines, in Geometry, 612.
Parcæ, the powerful goddesses called the Fates, who were named Clotho, Lachesis, and Atropos. The

decrees of the Fates were unchangeable even by the greatest of the gods, and they were worshipped with more true devoutness, perhaps, than any other supposed divinities, 87.
Paris, son of Priam of Troy, exposed in infancy because his mother Hecuba dreamt that she had brought forth a fatal torch. Educated as a shepherd on Mount Ida, Paris was chosen to decide on the comparative beauty of Juno, Minerva, and Venus, when these deities were rivals for a golden apple, inscribed by the goddess Discord with the words, 'To be given to the fairest.' Paris decided for Venus, who so favoured him in consequence, that he persuaded Helen, the most beautiful woman of the age, to fly with him to Troy. But all the Greek princes joined in resenting the injury, and Paris proved, indeed, the firebrand by which Troy was ruined. The judgment of Paris and the apple of Discord are the subjects of many classical allusions.
Parliament, British, origin of, 131; constitution of, 177.
Parnassus, a very lofty mountain of Greece, to which, as the supposed favourite seat of Apollo and the Muses, poets have looked in all times for inspiration.
Parsing, in English Grammar, 580.
Parthenon, a splendid temple of Minerva at Athens, adorned by the works of the sculptor Phidias. See Vol. I., p. 435.
Passover, a solemn festival of the Jews in commemoration of their deliverance from the destroying angel on the night previous to their departure from Egypt, when the first-born of the Egyptians were put to death, and the houses of the Israelites *passed over*—they being marked with the blood of the paschal lamb.
Patagonia, territory of, 313.
Pathos, in literary compositions, 692.
Patriarch, patriarchal society, 36.
Patroclus, the bosom-friend of Achilles, slain by Hector before the walls of Troy.
Patrons and clients, Roman, 98.
Pawnbroking, benevolent, 540.
Peace of mind, importance of, 463.
Pedestrianism (Lat. *pes*, a foot), feats in, 644–647.
Pegasus, a winged horse given by Minerva to Bellerophon when he went to combat the monster termed the Chimæra. Requiring a lofty flight, the poets frequently choose to imagine their motions aided by a Pegasus.
Pelion, a Thessalian mount, on which Ossa was piled when the Titans sought to scale heaven.
Peloponnesus, the ancient name for the Morea.
Penates, a class of inferior gods who presided over the inmost recesses of households.
Penelope, wife of Ulysses, king of Ithaca, famous for her fidelity to her husband during his long absence, despite the assaults of numerous importunate suitors. To deceive these, she said that she would wed when a certain piece of tapestry was finished by her, but the work done by day the chaste matron undid by night. Hence the phrase of Penelope's Web, applied to cases where progress is similarly retarded.
Peninsula (Lat. *pene*, almost, and *insula*, an island), a geographical term applied to any projecting portion of land connected with the mainland by a narrow neck or isthmus; applied *par excellence* to Spain and Portugal as the grand peninsula of Europe.
Peninsular war and campaigns, 169.
Pentateuch, the, history of, 386.
Penthesilea, a queen of the Amazons, proverbial for her boldness in war, and slain by Achilles before Troy.
Pericles, a renowned warrior, statesman, and orator of Athens, 91.
Peripatetic Sect.—The pupils of Aristotle, so named (from the Greek) because instructed by him while walking.
Perseus, son of Danae by Jupiter; exposed in infancy with his mother in a small bark, but preserved to fulfil the decrees of Fate by accidentally killing his grandsire. Perseus became a renowned hero, slaying the Gorgon Medusa, among other feats, by the aid of Pluto's invisible helmet and Minerva's shield. He also relieved Andromeda, an Ethiopian princess, from a sea-monster, to which she was exposed in chains. After his death, Perseus received the honours of a demigod, and poets and painters have dwelt much on the supposed incidents of his career.
Persians, the ancient, 79; Persian Empire, 79.
Perspective Drawing, 627.
Persuasion, in Rhetoric, 698.
Perth, description and account of, 240.
Peru, description and account of, 308.
Petronius (Arbiter), a favourite of Nero, often named in connection with gaieties and revels, from his being the caterer for amusement (*arbiter elegantiarum*) to that prince.
Phæton, son of the sun-god Phœbus-Apollo by the nymph Clymene. Taunted as of unknown birth by his youthful companions, Phæton is said to have visited the palace of the sun, and to have received from his sire a solemn promise that whatever he asked should be granted. The vain youth asked to drive the chariot of the sun for one day, and, bound by oath, Phœbus was reluctantly forced to comply. The issue was that the fiery steeds became unmanageable; and to prevent a universal conflagration, Jupiter struck Phæton to the earth with a thunderbolt. His death was so deeply mourned by his sisters, that in pity they were changed to poplars. Phæton is a byword for rash ambition.
Phalaris, a cruel Sicilian tyrant, who caused a brazen bull to be made for the purposes of torture, and consigned to it the inventor Perillus as the first victim.
Pharos, an islet in the bay of Alexandria, on which was a splendid lighthouse, deemed by the ancients one of the seven wonders of the world; sometimes used as a general term for a lighthouse.
Pharsalia, a place in Greece where the republican liberties of Rome received the final blow from the hands of Julius Cæsar, his great opponent Pompey being there conquered by him.
Phidias, the most illustrious of Greek sculptors.
Philip, a famous Macedonian monarch, father of Alexander the Great. By his great valour and consummate address Philip enlarged his dominions, and gained a fatal ascendancy over the free republics of Greece. Trained in youth in the schools of Thebes, he polished and disciplined his rude subjects, and raised them from a secondary to a primary position among their neighbours. Philip was an ambitious and unprincipled man, though capable of generous and even noble actions. His barbarian-like indulgence in drinking has been made memorable by the words of a claimant for justice at his hands: 'I appeal from Philip drunk to Philip sober,' was the reproof, and he bore it calmly. From the denunciations of him by Demosthenes, such oratorial invectives have been called Philippics.
Philology (Gr. *phileō*, I love, and *logos*, a word or discourse), the science which treats of language in general; its history, progress, and development among the various nations of the globe, 17.
Philomela, sister of Progne, who was wife to Tereus, king of Thrace. While bringing Philomela to see her sister, Tereus offered violence to her; and after cutting out her tongue to prevent discovery, confined her in a lonely castle. He then told Progne that her sister had died by the way, but the former detected the falsehood by means of a piece of tapestry wrought by Philomela. The infuriated wife of Tereus slew and served up to him his own son in a dish, on discovering which he would have slain her, but was on the spot changed into a hoopoe, while the son's remains became a pheasant, Progne a swallow, and Philomela a nightingale. The nightingale yet bears this name, and is supposed by the poets to wail her sad fate in the sounds 'Teru! Teru!'

Philoprogenitiveness, in Phrenology, 340.
Phœbe, a name given to Diana in the character of the moon, 86.
Phœnicians, history of, 73; commerce of, 74.
Phormium tenax, or New Zealand flax, 287.
Photogenic Drawing or Photography, 732.
PHOTOGRAPHY, 732–736.
PHRENOLOGY, 337–352.
Physiology, logic of the science, 367.
Pianoforte, musical instrument, 768.
Pica, a variety of type, in Printing, 709.
Piccolo, musical instrument, 766.
Picture-frames, how to clean, 772.
Pieria, a spot in Thessaly, which gave the epithet Pierian to the Muses.
Pindar, a poet of Thebes in Bœotia, justly regarded as the prince of lyric poetry. His odes are without parallel for sublimity and fire.
Pirithöus, an ancient hero, betwixt whom and Theseus so strong a friendship existed, that the pair are quoted as models of that sentiment.
Pittacus, one of the Seven Wise Men of Greece.
Pix (Lat.), the little box or chest in which the consecrated host of the Roman Catholic Church is kept. A box kept at the British Mint, in which a small sample of the coins struck is deposited, in order to be assayed and compared with a standard preserved in the Exchequer. This operation, called 'trial of the pix,' is performed in presence of certain members of the Privy-Council, the officers of the Mint, and a jury of the Goldsmiths' Company.
Planetary system, design in, 369.
Plants, how to dry and preserve, 781.
Plato, a philosopher of Athenian descent, whose name stands at the head of his class among the Greeks. He was a disciple of Socrates, and founded the school of Academics. Plato laboured to construct a great system of metaphysics, morals, and policy, and displayed his own genius in eliciting many profound isolated truths; but, as a whole, his system is but a maze of ingenious conjecture. The phrase 'Platonic love,' indicating an affection seated merely in the mind, is derived from some principles evolved in his account of an imaginary and perfect republic.
Pleides, the seven daughters of Atlas, placed at their death among the constellations.
Pliny.—Two members of the Pliny family, uncle and nephew, have left brilliant names in Roman literature. The elder Pliny wrote many works, but his 'Natural History,' a production alike full of truths and absurdities, has alone been preserved; and of the younger Pliny, the 'Letters' are still extant. The uncle perished in an eruption of Vesuvius, A.D. 79.
Plutarch, a Greek historical biographer, whose valuable works have given a name to many compositions of the same class.
Pluto, one of the sons of Saturn, and king of the infernal regions. He married Proserpine, the daughter of Ceres, having borne her off from Sicily while gathering flowers—'herself a fairer flower.' Black bulls were most frequently sacrificed to Pluto, who is represented as a grim figure, with a two-pronged trident in his hand, and keys, to indicate his close wardship of the dead. He sat on a throne of sulphur, and around him were his gloomy courtiers, the Fates, the Furies, and other infernal powers. Dis, Ades, Orcus, are names sometimes given to Pluto, 86.
Plutus, the god of riches among the ancients, painted as blind.
Plymouth, naval station of, 223.
Poetry, in Rhetoric, 701.
Politeness, good manners, 457.
POLITICAL ECONOMY, 481–496.
Pollux, son of Leda, and brother to Castor, raised to a place among the stars.
Polygamy (Gr. *polys*, many, *gamé*, marriage), 33.
Polyhymnia, the muse of singing and rhetoric, 87.
Polynesia, geographical account of, 288.
Polyphemus, a gigantic Cyclop, whose one eye Ulysses burnt out with a firebrand, on being captured by the monster. The story is told in the 'Odyssey.'
Polysynthetic (Gr.), a term applied to the aboriginal American languages, from their excessive tendency to agglutinate syllables into long words, 52.
Pomades, recipes for, 784.
Pomatum, how to make, 784.
Pomona, a Roman deity, who had charge of gardens and fruit-trees. She had vowed to live single; but changing himself into an old woman, as the pretty fable runs, Vertumnus, the god of spring, induced her to change her purpose.
Pompey.—The family of Pompey was a famous one at Rome, but chiefly rendered eminent by one member, called Pompey the Great. The conquests of this Roman were of vast extent, and his triumphs numerous, while his character is described as noble in the extreme. But though Pompey married the daughter of Julius Cæsar to cement their friendship, two men of such aspiring minds could not co-exist in peace in Rome. They turned their arms against one another, and at Pharsalia Cæsar proved the conqueror. Pompey fled to Egypt, and was there basely and ungratefully murdered, 107–109.
Poor, arrangements for, in England, 517; in Scotland, 521; in Ireland, 523.
POOR-LAWS, 517–524.
Pope, origin of the term and office, 398.
POPULATION, theories respecting, 513–517.
Portsmouth, naval station of, 222.
Portugal and Spain, description of, 195.
Potashes, manufacture of, 779.
Praxiteles, a native of Cnidus, famous for his skill in statuary.
Preposition, in Grammar, 579.
Presses, printing, varieties of, 714–720; copperplate, 728; lithographic, 732.
Priam, king of Troy, an aged man when the Greek princes besieged and took his city.
Priapus, a son of Bacchus and Venus, whose statues, set up in gardens, were of a very offensive nature.
Pride and self-respect, 459.
Prince Edward's Island, account of, 296.
PRINTING, LETTERPRESS, 705–720; origin and history of, 705–711; process of, 711–720. Plate Printing, 728; Lithographic Printing, 732.
Priscianus, a grammarian of the Greek Empire, whose name is often quoted in reference to correctness of language.
Procrustes, a robber chief of Attica, who was wont to bind travellers down to a bed, and to cut off a portion of their bodies, or to rack these out, if they chanced in either way not to fit the couch. He was killed by Theseus. The bed of Procrustes is a familiar allusion.
Production, in Political Economy, 496.
Profanity, crime of, 416.
Progression, arithmetical, 597; geometrical, 599.
Prometheus, one of the Titanic race, famed for his knowledge and address, and capable of deceiving Jupiter himself. To punish a fraud exercised upon him, that god took away fire from mankind, but Prometheus clomb the heavens and regained the element by theft. Jupiter, still more provoked, sent down Pandora with a box of ills, but Prometheus was too cautious to accept the gift. The supreme deity, however, chastised him by chaining him to Mount Caucasus, and sent a vulture to feed perpetually on his liver, which still remained undiminished. Hercules at length set the sufferer free. The stealing of the fire is supposed to refer to the discovery of its use; and Prometheus, whose story is often referred to, is called the inventor of many useful arts.
Pronoun, in Grammar, 578.
Propertius, one of the secondary Roman poets, author of many beautiful though not perfectly moral compositions.

Prophets, the books of the, 383.
Proportion, or Rule of Three, 600.
Propositions and assertions, in Logic, 356.
Proserpine, the daughter of Ceres, and wife of Pluto, permitted to spend half the year in heaven at her mother's intreaties. The changes of the moon are supposed to be indicated here. Proserpine was universally worshipped, sometimes under the name of Libitina, Hecate, and Libera.
Proteus, a sea deity, who possessed the gift of prophecy, but was difficult of access, and unless properly chained, had the power of assuming different shapes to elude his interrogators. Proteus affords a favourite similitude to express a change of form or purpose.
Provost, chief municipal magistrate in Scotland, functions of, 45.
Prussia, geographical description of, 207.
Psaltery, a stringed instrument, 768.
Psyché, a beauteous nymph whom Cupid married and long lived with in a state of bliss. Venus put her to death, but Jupiter in pity made her afterwards immortal. As Psyche means the soul, this story is thought to present a personification of it; and to indicate the light ethereality of the soul, Psyche is painted with the wings of a butterfly.
Ptolemy.—The Ptolemies were a race of sovereigns, descended from a general of Alexander the Great who obtained the throne of Egypt.
Punctuation, in Grammar, 590.
Punica Fides.—The Romans in their enmity called the Carthaginian or Punic people extremely treacherous, and hence sprung the phrase *Punica fides* (Punic faith), to express utter faithlessness.
Pygmalion, a sculptor of Cyprus, who, having made a beautiful ivory statue of a female, fell in love with his own work, and by his prayers moved Venus to animate it. This fable is the theme of frequent allusion.
Pylades, a prince of Phocis, bound so closely in the bands of friendship with Orestes, that they are cited as exemplars of that feeling in its strongest form.
Pyramids of Egypt, 674; vignette to No. 55.
Pyramus, a youth of Babylon, attached to Thisbe, whom, from the hostility of their parents, he could only converse with through a chink in the wall betwixt their habitations. The lovers, however, appointed to meet at the tomb of Ninus. Thisbe arriving first, was frightened away by a lioness, which, with bloody jaws, tore a scarf dropped in her flight. Pyramus saw this article, and believing Thisbe dead, slew himself. The distracted maiden, on her return, followed him to the tomb.
Pyrrha, wife of Deucalion, and saved with him from the great Thessalian deluge. By throwing stones behind her she is fabled to have repeopled the earth with women, as Deucalion supplied it with men.
Pythagoras, a celebrated philosopher of Samos, who, amid many useful doctrines, taught the curious one of the transmigration of souls, and even said that he remembered what bodies he had occupied before. He made his pupils keep silence for many years. The greatness of his real talents is shown by his assertion, that the planets move round the sun as a centre—an idea laughed at in his own time, but since established as a certainty.
Pythia (Pythoness), the priestess of Apollo at Delphi, who, inspired by vapours from the earth, delivered, amid convulsive writhings, the oracles of the deity. See Delphic oracle, 88.
Python, a serpent killed by Apollo, from which his priestess received her name, as he himself was called the Pythian god.

Quadrilateral or four-sided figures, in Geometry, 613.
Quadrilles, various, 672.
Quartett (Lat. *quartus*, four), in Music, 765.
Quarto, a printer and bookbinder's term, 711.
Quaver, semi, and demisemi, in Music, 739.
Quiddity, an obsolete scholastic term for essence; quiddit, a subtilty.
Quintett (Lat. *quintus*, five), in Music, 765.
Quoits, game of, 655.

Rack, an ancient instrument of torture, 687.
Racket, game of, 655.
Railways of Great Britain and Ireland, 188.
Rank and condition, duties regarding, 477.
Ranks and titles, 48.
Ratiocination or argumentative inference, in Logic, 358.
Ratios, in Arithmetic, 599.
Rats, how to get rid of, 774.
Razors and razor-pastes, 782.
Recreations and amusements, duties regarding, 477.
Recreations, Out-of-Door, 647–656.
Reels, Scotch, 672.
Reflex actions, 322.
Reformation, the, in Britain, 135.
Regulus, a Roman consul, who, in warring with Carthage, was taken prisoner, and afterwards sent home to negotiate a peace. Aware of the reduced state of their enemy, Regulus advised the Romans not to agree to a cessation of hostilities. The noble prisoner thus sealed his own doom, as he was bound, if peace was not obtained, to return to Carthage. He did so, and underwent, after cruel tortures, the horrible death of being shut up in a barrel pierced on all sides with sharp spikes. His devotion to his country and his promise have gained him an undying name; see History of Rome.
Religious obligations, 479.
Rent or price of land, in Political Economy, 493.
Reptiles, design in the structure of, 375.
Republics, republican governments, 42.
Revolutions, in Civil Government, 43.
Rhadamanthus, brother of Minos, and so famous for his equity on earth, as to have been appointed one of the judges of the dead.
Rhetoric and Belles Lettres, 689–704.
Rhythm or measure, in Music, 739.
Richard Cœur de Lion, 131.
Roads of Great Britain and Ireland, 188.
Rogation Sunday, origin of, 439.
Roman antiquities in Britain, 685.
Roman Catholic Church, [illegible].
Rome, History of, 97–112.
Romulus and Remus, the two brothers who founded Rome, were fabled by their proud descendants to be the sons of Mars by a princess of Italy. They were exposed in infancy, but were saved and suckled by a she-wolf. The twins, on reaching manhood, resolved to found a city; but, for a trifling offence, Remus was slain by his brother. Romulus, however, with a band of fugitives and criminals, founded Rome; and as the neighbouring tribes despised his followers, he carried off mates for them from among the women of the Sabine nation. This abduction was often adverted to by the descendants of its authors. Romulus reigned thirty-nine years, and was then carried up to heaven, according to a story invented, most probably, to conceal his assassination. He received divine honours after his death, 98.
Roscius, a Roman actor of such celebrity, that every distinguished follower of that profession has received his name.
Roses, war of the, in English history, 133.
Rosicrucians, account of the, 432.
Rubicon, now Rugone, a small stream of Italy, which, after long hesitation, Julius Cæsar crossed, thus throwing off allegiance to the Roman senate, and affording a lasting simile for the taking of any decisive and hazardous step.
Running, as a gymnastic exercise, 644.
Russia, geographical description of, 207.

Sabines, a primitive Italian people, from among whom Romulus carried off wives for his followers on founding Rome.

Sackbut or Trombone, 767.
Sadler, his theory of population, 515.
Sallust, a Roman historian, whose works, though not lengthened, are justly valued for their style and accuracy.
Sappho, a famous poetess of Lesbos, whose scanty fragments indicate extraordinary powers, and who was so tortured by love as to throw herself into the sea.
Saracens, empire of, 115.
Sardanapalus, the last of the Assyrian monarch, noted for his luxury and effeminacy. His officers having conspired against him, and besieged him in Nineveh, he set fire to his palace, and was consumed in the flames, with all his slaves, concubines, and treasures, 77.
Saturn, son of the heaven and earth, and supreme ruler of the earth till he was dethroned by his son Jupiter. Saturn afterwards fled to Italy, and so cultivated there the arts of peace and simple industry, that his reign was called the Golden Age, 86.
Saturnalia, festivals held in honour of Saturn, and intended to commemorate the freedom and equality which prevailed in the Golden Age, when Saturn was king. From the privileges enjoyed during these holidays by the poor man and the slave, any revels where a free and levelling spirit is displayed have been called Saturnalia.
Satyrs, minor deities of the country, shaped like goats inferiorly, and having horns on their head and long hair over the body, 87.
Savings' banks, 529–533.
Sax-horn, musical instrument, 767.
Scale, the major, in Music, 737; the minor, 742; intervals of, 742.
Scales, construction of, in Geometry, 616.
Scandinavia. See Norway and Sweden, 206.
Scandinavian superstitions, 417.
Schœffer, inventor of letter-founding, 706.
Sciences, logic of the, 364.
Scipio, the patronymic of an illustrious family of Rome, one member of whom, surnamed Africanus from the feat, was the conqueror of Hannibal at Zama. He was equally famous for his private virtues as for his military successes; and 'the continence of a Scipio,' a common phrase, had its origin in the refusal of Africanus to see a beautiful princess who had fallen into his hands, lest the frailty of human nature should tempt him to take any advantage of his power over her fate.
SCOTLAND, HISTORY OF—see History of Great Britain and Ireland, 129–176; description of, 225–240; superficial features, 225; geology, 225; hydrography, 226; climate, 227; botany and zoology, 227; population, 227; national industry, 228; remarkable scenery, 228; antiquities, 235; chief towns and ports, 236.
Scriptures, the authenticity of, 390.
SCULPTURE, 638–640.
Scylla, a rock off Sicily, famous as dangerous to mariners, in combination with the whirlpool Charybdis. The ancients called the rock a monster, into which the nymph Scylla had been changed by Circé.
Seasons, effects of on mortality, 551.
Second-sight, superstition of, 429.
Secretiveness, in Phrenology, 341.
Self, duty of trusting to one's, 473.
Self-esteem, sentiment of, in Phrenology, 342.
Self-help, duty of, 473.
Self-love, duty of, 451.
Self-respect, duty of, 459.
Semelé, daughter of Cadmus, and mother of Bacchus by Jupiter, destroyed by her vain wish to behold her lover in all the insupportable blaze of his divinity.
Semiramis, a queen of Assyria, celebrated for her masculine strength of character, her warlike successes, and the magnificent buildings which she constructed in Babylon.
Semitic or Syro-Arabian race, in Ethnology, comprehends the Syrian and Arabian families of mankind, 2.
Sennefelder, inventor of Lithography, 730.
Sensations and organs of sense, 323.
September, festival Calendar for, 448.
Sequestration, law relating to, in Scotland, 502.
Serapis, a deity of the ancient Egyptians.
Serfs, serfdom, in feudal law, 56.
Serpent, musical instrument, 767.
Servants, in domestic economy, 771.
Servants and masters, respective duties of, 472.
Sesostris, an early king, renowned for the extent of his conquests and the mildness of his sway.
Sestett, in Music, 765.
Shaving and shaving-pastes, 782.
Sheriff, jurisdiction and functions of, 45.
Shinty, hockey, or hurling, game of, 655.
Shrove-Tuesday, festival of, 434.
Sibyls, women inspired by the gods with the spirit of prophecy. The most famous of them was the Cumæan Sibyl, who is said to have resided at Cumæ in Italy, and to have obtained from Apollo the privilege of living for as many years as there were grains in a handful of sand. But she forgot to ask for youth also, and grew old and decrepit. It is stated that the Sibyl sold three of nine volumes of prophecies to the monarch Tarquin, and that these were preserved and consulted by the Romans with great reverence, until they were destroyed by fire. A book of Sibylline verses is extant, but scholars universally deem it spurious and modern. Every gipsy fortune-teller is familiarly termed a Sibyl.
Sight, as a sense, 326.
Sight, second, superstition of, 429.
Silenus, a son of Pan, and attendant of Bacchus, usually painted as a jolly intoxicated old man riding on an ass, and crowned with flowers.
Silks, how to keep and clean, 773.
Silver-plate, how to keep and clean, 773.
Similarity, the law of, in Metaphysics, 329; the emotion of, 333.
Sincerity and insincerity, duties regarding, 456.
Sinon, a Greek, whose frauds before Troy have made his name a byword.
Sirens.—Three sea-nymphs who lived on a small island near Sicily, and so charmed the passing voyager with their melodious voices, that he forgot all else, and died of starvation while listening. Ulysses, in order to hear them safely, had the ears of his crew stuffed, and himself tied to the mast of his ship. He was enchanted with the music, but the crew would not obey his commands to stop, and thus he listened and yet lived. The disappointed Sirens threw themselves into the sea. Fine female singers are styled Sirens in common speech.
Sisyphus, a crafty prince of the heroic times of Greece, who, for some uncertain offence to the gods, was doomed, in the infernal regions, to roll a huge stone up a hill, whence it re-descended immediately, rendering his punishment perpetual. The fruitless toil of Sisyphus is often the theme of allusion and comparison.
Size, organ of, in Phrenology, 348.
Skating, as an art and recreation, 648.
Sketching, in Drawing, 630.
Slander, crime of, 460.
Slavery, socially considered, 37.
Smell, as a sense, 324.
Smuggling or contraband trading, 502.
SOCIAL ECONOMICS OF THE INDUSTRIOUS ORDERS, 529–544.
Sociability, emotions of, 332.
SOCIETY, CONSTITUTION OF, 33–39.
Sociology, or the science of society, 368.
Socrates, the wisest and best character, perhaps, of antiquity. He was born and lived in Athens, where, in an unpretending way, he taught men to love virtue and cultivate knowledge. His opinions and actions, as recorded by his pupils Plato and Xenophon, have filled posterity with admiration for him from whom they came. Socrates was at length

accused by the ungrateful Athenians of offences against religion, and died, according to his sentence, by drinking a cup of hemlock presented to him. His last moments, spent among his weeping friends, brought out his character in even a nobler light than it had before appeared in.
Sol-fa-ing, in musical practice, 742.
Solon, one of the seven wise men of Greece, celebrated for the equity of the laws dictated by him to the Athenians. His fame for wisdom has caused men of similar repute to be called Solons.
Somnus, the god of Sleep, and son of Night.
Sophocles, a tragic poet of Greece, who composed in a grave and lofty style.
Soprano (Ital. *sopra*, above), the upper or treble part in musical composition, 738.
Spain and Portugal, description of, 195.
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Spectral illusions phrenologically treated, 350.
Spectres, spectral illusions, 427.
Speculation, game with cards, 671.
Spermaceti ointment, how to make, 784.
Sphinx, a monster with the head and chest of a woman, a dog's body, a serpent's tail, and the wings of a bird, sent by Juno to devastate Bœotia. An oracle told that the Sphinx would destroy herself on one of her enigmas being explained, and Œdipus, on being asked by her what animal walked on four legs at morn, two at noon, and three in the evening, correctly answered 'man,' referring to infancy, manhood, and old age. The Sphinx then killed herself against a rock.
Spruce-beer, recipe for making, 780.
Spurzheim, Dr, and Phrenology, 337.
St Agnes's Day, festival of, 433.
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St Crispan, festival of, 443.
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St Patrick's Day, origin of, 436.
St Swithin's Day, in the Romish Calendar, 442.
St Valentine's Day, origin of, 435.
St Vincent and its dependencies, West Indies, 316.
Stagyra, the birthplace of Aristotle; whence he was called the Stagyrite.
Starching, how to practise, 774.
Statistics, Popular, 545–560.
Statute Law, in England, 59.
Steel-engraving, art and practice of, 726.
Steel-plate engraving, process of, 728.
Stentor, a Greek, whose voice, according to Homer, equalled those of fifty men combined. 'Stentorian' is an established synonyme for excessively loud enunciation.
Stereotyping, nature and process of, 712.
Stippling, a species of engraving, 727.
Stocks—Stock-Exchange—Stockjobbing, 509.
Stoics, a sect of philosophers founded by Zeno, who professed so grave and stern a morality, that their designation has been applied to men who exhibit great powers of self-restraint and endurance.
Stonehenge, temple of, 215, 683.
Stones, standing, in Archæology, 683.
Stuarts, the, reigns of, 139–156.
Style, in composition, 689.
Styx, a cold and venomous river of the infernal regions, famous on account of the estimation in which it was held by the gods, who swore by it, and held such oaths inviolable.
Subjects, public duties as, 465.
Subtraction, in Arithmetic, 595; in Algebra, 605.
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Suspensions, in Music, 752.
Swan River, British settlement of, 284.
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Swimming as an art and recreation, 647.
Switzerland, description of, 197.
Sybaris, a town on the bay of Tarentum in Italy, the inhabitants of which were so effeminate, that 'a Sybarite' has become a phrase applied to any person of such a character.
Sympathy, in Metaphysics, 335; in Phrenology, 352.
Syntax, in English Grammar, 587.
Syria, ancient history of, 73.

Tacitus, a Roman annalist of the Empire, whose writings have been deemed models of excellence in historical literature.
Tailpieces, in Wood-Engraving, 722.
Talbotype or Calotype, art of, 734.
Tantalus, who, for murdering his own son, and serving him up to Jupiter to try his divine insight, was condemned to remain up to the neck in water, which ever fled from his lips as he sought to slake his perpetual thirst; hence the word 'tantalise,' now firmly fixed in various modern languages.
Tariff. See commercial terms, 502.
Tarpeia, a woman who is said to have given name to the Tarpeian Rock on which stood the Capitol, and from which great malefactors were hurled by the Romans.
Tarquinii, 99.—From the son of the last Tarquin of Rome, forcible despoilers of female honour have gained a name appropriate to their actions.
Tartarus, the most familiar name of the infernal regions. Though taken often for the whole, Tartarus properly expressed the last abode of the wicked, as Elysium indicated that of the good.
Taste, as a sense, 324; faculty of, 352.
Taxes, British, revenue arising from, 183.
Taxidermy, art of, 781.
Teeth, the, how to preserve and clean, 783.
Telemachus, son of Ulysses, who showed his filial piety by travelling in quest of his father, when the latter wandered from place to place on his way from Troy. Minerva accompanied the young prince under the form of an old man named Mentor; whence a common term for a counsellor and guide.
Tempé, a vale of Thessaly, described by the poets as the most delightful spot on the earth, and used as a by-name for all similar scenes of natural beauty.
Temperance drinks, 780.
Tennis, game of, 655.
Tenor or Tenóre (Ital.), the mean or middle part in musical composition, being the ordinary compass of the human voice when neither raised to a treble nor lowered to a bass, 738.
Tenoroon, musical instrument, 766.
Terpsichoré, the Muse of dancing, 87.
Terror, emotion of, 331.
Testament, the Old, history of, 385; the New, 388.
Thales, one of the seven wise men of Greece, peculiarly famous for his skill in astronomy.
Thalia, the Muse who presided over comic poetry, pastorals, and festival celebrations, 87.
Themis, a goddess whom Homer calls the presiding guardian of justice and civil law, and whom modern lawyers nominally acknowledge as their patroness. She is painted holding a sword and scales.
Themistocles, a famous Athenian commander, who conquered the Persians at the great naval fight of Salamis. Several anecdotes of him are often quoted. 'Strike, but hear me!' were words used by him to an angry adversary.
Theocritus, a native of Syracuse, styled the father of pastoral poetry.
Theology, Natural, 369–384.
Thermopylæ, famous battle of, 91.
Theseus, an Athenian prince of the heroic ages, renowned for his great deeds. In youth he went to Crete as one of the tributary band to be sacrificed in the Labyrinth to the Minotaur, but he slew the mon-

ster, and escaped by the help of the Clue of Ariadne. He afterwards deserted Ariadne. The share of Theseus in the battle of the Lapithæ, his friendship for Pirithous, proverbial for its closeness, and a visit to Tartarus, are among the principal other features in his story.
Thespis, an ancient Greek poet, from whom, as the supposed inventor of tragedy, springs the phrase of the Thespian art, applied to the drama.
Thetis, a sea-deity, who, by marriage with the mortal Peleus, became the mother of Achilles.
Thisbé, a maiden of Babylon, beloved by Pyramus.
Thor, the Scandinavian god of war, 418.
Thucydides, a historian of Athens, highly esteemed for his fidelity and the merits of his style.
Thule, an island in the northern parts of the German Ocean, termed by the Romans *Ultima Thule*, as the ultimate point of the earth in that direction. Some have thought it Greenland, and some Iceland; but the probability is, that the name was really applied to the Shetland Isles.
Tiberius (Cæsar), successor of Augustus, and only less proverbial for cruelty than his successors Nero and Domitian.
Tibullus, a poet of Rome, whose graceful and chaste compositions have gained for him a first place among elegiac bards.
Time, duties regarding the use of, 451.
Time, in Music, 739.
Time, organ of, in Phrenology, 349.
Timotheus, a poet and musician who followed the fortunes of Alexander, and is celebrated by Dryden as 'raising a mortal to the skies'—that is, flattering his master as a divinity.
Tinting, in Drawing, 634.
Tiresias, a famous Theban, struck blind, as the story runs, by Juno, but gifted with prophecy by Jupiter, and consulted during his life by all Greece.
Tisiphone, one of the three Furies, 87.
Titan.—The gigantic family of the Titans, descended from the Heaven and Earth, warred against Jupiter, and tossed mountains at him in their fury, but were subdued, and condemned to heavy punishments.
Titania, queen of the fairies, 420.
Titles and ranks, 48.
Tobago, West India island, 316.
Tone and semitone, in Music, 738.
Torques, in Archæology, 684.
Touch, as a sense, 325.
Towers, round, in Archæology, 680.
Trajan, a Roman emperor, whose many virtues are chiefly sullied by his cruelty to the primitive Christians of Rome. Trajan's Pillar at Rome is a work of great celebrity.
Transition, enharmonic, in Music, 759.
Trap-ball, game of, 655.
Triangles, in Geometry, 612.
Trigonometry, 622.
Trinidad, island, account of, 316.
Trio, in Music, 765.
Triptolemus, a native of Eleusis, whom Ceres sought to make immortal by laying him upon flames to purge away the grossness of humanity; but his mother, through curiosity, peeped upon the proceedings, and, terrified at the sight, frustrated the design. In compensation, Ceres taught Triptolemus the art of agriculture, and gave him the honour of its dissemination over the earth.
Triton, a leading sea-god, represented as half man half dolphin; and always seen blowing a horn.
Trombone or Sackbut, musical instrument, 767.
Trosachs, scenery of the, 228.
Trumpet, musical instrument, 767.
Truth and falsehood, duties regarding, 455.
Tumuli, in Archæology, 679.
Tune, organ of, in Phrenology, 349.
Turkey in Europe, description of, 199; in Asia, 258.
Turks during the Middle Ages, 125.
Tusculum, the country-seat of Cicero, from which similar retreats of renowned men are sometimes called Tusculan villas.
Types, used in printing, 709.
Tyrtæus, a Greek poet, usually held the type of martial verse-writers.

Ulysses, king of Ithaca, usually deemed the wisest of the Greeks who went to Troy. After the close of the siege of that city, during which he carried off its Palladium, and performed many feats of address and valour, he underwent many years of adventure, described in the 'Odyssey,' ere he reached his home. There he found his means wasted by suitors to his wife Penelope; but the tried warrior soon slew or dispersed them all, and resumed his throne in peace.
United States, general account of, 298–304.
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Urania, the Muse who presided over astronomy, 87.
Utopia, Utopian communities, 34.

Van Diemen's Land, colony of, 285.
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Vaulting, in Gymnastics, 642.
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Vendue. See commercial terms, 502.
Veneration, in Metaphysics, 332; in Phrenology, 345.
Venezuela, Republic of, described, 307.
Ventilation, duties regarding, 451.
Ventilation and fumigation, 776.
Venus, the goddess of Love and Beauty, and mother of Cupid. Her parentage is not settled; but she sprung directly, it is said, from the froth of the sea, and was immediately received among the deities. The character given to Venus is one befitting only the goddess of licentious pleasure. Her power to charm is stated to have depended on her *cestus* or zone, and she was usually represented sitting in a chariot drawn by doves. From various favourite spots she is called by the names of the Cytherean, Cyprian, and Paphian goddess, as well as by other names, 87.
Verb, in Grammar, 579; inflection of, 583.
Vermin, how to destroy, 774.
Vertumnus, the god of Spring among the Romans.
Vesta, usually termed the mother of the deities, and patroness of the virgins called Vestal, who, like modern sisterhoods of nuns, retired from the world to live in sacred establishments. Any departure from chastity was fearfully punished in them, and to seduce a Vestal Virgin was deemed a horrible crime in men. A fire was kept burning continually in the vestal establishments, its extinction being dreaded as an omen of heavy calamity. The phrases of 'Vestal Virgins' and 'vestal flames' are familiarly used in the sense here indicated.
Violin, viola, and violoncello, in Music, 765.
Virgin islands, West Indies, 316.
Virginia, daughter of the tribune Virginius, having arrested the licentious eye of Appius Claudius, then in power, he endeavoured to get possession of her by proving her to be his slave; but her father defeated his nearly successful design by stabbing her with his own hands, to preserve her honour.
Voice, the human, as fitted for articulate sounds, 18.
Voices, in choral harmony, 765.
Vowels, and vowel sounds, in Language, 18.
Vulcan, son of Juno, and god of Fire, supposed to work, with his assistants the Cyclops, in the interior of Mount Ætna. Though lame and deformed, he was the husband of the goddess of Beauty, and father of Cupid. He acted as armourer to the gods, and sometimes wrought for men, as in the case of Achilles. The worship of Vulcan was well established, 87.
Vulgarity, what it is, 458.

Wages, in Political Economy, 489.
Wales, New South, account of, 283.
Walhalla, or Valhalla, in Scandinavian mythology

the great hall for the reception of the spirits of the brave, 418.
Walking, in Gymnastics, 644–647.
Walls, how to keep and clean, 772.
Wassail bowl, origin of the term, 483.
Water, how to manage in household economy; how to purify; how to filter; how to test, 779.
Weight, organ of, in Phrenology, 348.
Weights and measures, British, 597.
Wellington, military successes of, 170–173.
Whist, game of, 667.
Whitsunday, term and festival of, 441.
Wife and husband, respective relations of, 470.
Wight, Isle of, described, 215.
Wilkes, Mr John, 161.
Will, duty of making a, 473.
Will, the human, 336.
Windows, how to keep and clean, 772.
Wit, in Metaphysics, 333; in Phrenology, 347; in literary compositions, 692.
Witchcraft, account of, 421–427.
Wonder, organ of, in Phrenology, 346.
Wood-engraving, practice of as an art, 721–724; as a profession, 723.
Words, formation of, 19.

Xanthus, the ancient capital of Lydia, whence the Xanthian marbles now in the British Museum.
Xantippé, wife of Socrates, and so great a shrew as to have given a name to all ladies similarly gifted.
Xenophon, an illustrious writer and soldier of Athens, who went to Persia to assist Cyrus to obtain the throne of that country. When Cyrus was defeated, the auxiliary Greeks made that retreat homewards so often adverted to as the Retreat of the Ten Thousand. Xenophon latterly was their leader.
Xylography (Gr. *xylon*, wood, and *graphein*, to draw), an affected term for the art of wood-engraving; hence also xylograph, 721.

Yankee, a familiar epithet for a native of the United States of America; thought to be a corrupt pronunciation, by the native Indians, of the French word *Anglais*.
York, House of, in English history, 133; city of, 224.
Youth, duties of, 449.
Yucatan, state of, described, 304.
Yule (from the same root as the Greek word *helios*, the sun), the name given in Scotland to Christmas; originally the great annual feast among northern nations at the time of the winter solstice, in honour of the sun.

Zealand, New, settlements of, 266.
Zemindar, a Hindoostanee term for a feudatory or landholder who governs a district of country, and collects taxes, either directly or through others who farm them from him.
Zendavesta, the sacred book of the Parsees, ascribed to Zoroaster, and held as the sole rule of faith and practice; Zend, the term applied to the language in which the book is written.
Zincography, a species of engraving, 732.
Zoophytes, design in the structure of, 373.
Zoroaster, a famous Persian sage, who is said to have founded or reformed the religion of the Magi.

THE END.

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